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UNITED STATES DEPARTMENT OF AGRICULTURE

YEARBOOK OF AGRICULTURE 1935

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UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1935

Organization of the United States Department of Agriculture

Corrected to May 15, 1935

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FOREWORD

S WE move toward economic and social cooperation, we need more science. Extensive cooperation of that kind, as in the farm adjustment programs, cannot be developed through trial and error alone. That would be inviting failure. In our pioneer period and for long afterward, the trial and error process worked. It produced mistakes, but the mistakes did not drag down whole communities. Now things are different. With public agencies making decisions in farm production, land settlement, land use, etc., blind experimentation more and more must give place to knowledge. science cannot eliminate the risks, it can lessen them. (Moreover, we need more science of special kinds. All science has social value. But the application varies with social conditions. Sometimes we need mostly technology or production-science. Again we may chiefly want to know about the distribution of wealth. Production-science is useless if goods cannot be distributed. It is important just now to study marketing, consumption, debt, the rural-urban balance, international trade, population movements, and money matters. These problems are primary. Unless we can solve them, we shall fail eventually to solve even minor questions. The United States Department of Agriculture is devoting much attention to such studies in a research program shaped by the pressure of national wants. (In its long experience, the Department has learned how to attract into its service, how to retain, and how to encourage able investigators. There is really only one rule: namely, that scientific men shall be allowed to follow the truth. Science cannot be blue printed and pushed forward on a schedule. Often scientists should be under no obligation to produce immediate results. Sometimes, on the other hand, they must answer emergency calls. The great thing, in directing science, is not to regiment it; for that would be to kill it. (We combine organization with freedom in our political life. We are trying to do the same in the economic sphere. There is an identical problem in science. Organization is necessary in this field too. Modern science is cooperative. Scientific men cannot work in isolation without funds, equipment, and communication with fellow workers. But the organization of research, particularly in studies that affect economic interests, is difficult. It tempts us to anticipate findings. This temptation we must resist. Otherwise the research is spurious and the research morale declines. Science is either free or dead. In organizing research we must not destroy its nature and leave only a mechanism. (How to organize research without regimenting the research personnel is a problem that needs further study. From the organization to the regimentation of science. the descent is easy. It is imperative to avoid this calamity. The principal thing that distinguishes the progressive from the decadent countries is mental freedom; and in science this quality is indispensable. As scientific people enter research in the public service in increasing numbers, i

economic and social engineering, we show conditions necessary to sound work. The believe, that the United States Department necessary. Readers will observe that the consensus among specialists in the subject

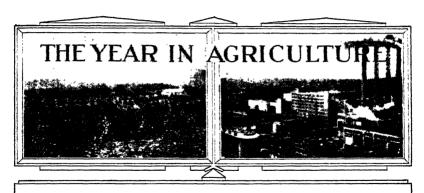
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not exclude individual opinion and individual mamps. The Department does not impress a dead uniformity on the writings of its scientific staff. It encounted freedom of expression, as well as freedom of inquiry. Better a difference of opinion within the family than an imposed and therefore worthless unanimity. This volume indicates that science can be organized without ceasing to thrive.

HENRY A. WALLACE, Secretary of Agriculture.

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THE SECRETARY'S REPORT TO THE PRESIDENT

Washington, D. C., December 12, 1934.

To the President:

TOWARD A BALANCED ABUNDANCE

Experiments of interest and concern to the public usually meet with objections from opposite poles. Some people say the experiments will not work, and others that they will work too well. It was said of Stevenson's locomotive that it would not run and that it would run too fast. It was said of the Agricultural Adjustment Act that it would not control production and that it would control production to the point of scarcity. Two seasons of trial have disposed of the first objection. Everyone now recognizes that in the combination of benefit payments and processing taxes agriculture has an effective means of adjusting its production to the needs of the market, a method which overcomes the obstacles that wrecked all previous efforts to accomplish that end. This new method rewards principally those who take part in production adjustments. Previous methods had exactly the opposite result. They benefited outsiders and forced insiders to pay the costs. So successful has the new method proved, that we hear louder than ever the objection that it will work too well for the good of the community, that it creates want and not welfare.

This objection has no better foundation than the one it supplanted. In proof we need simply to review the action taken and the results achieved up to the present; for the story shows why the Agricultural Adjustment Act succeeds in adjusting production to the demand and why it would not succeed were it used to reduce production below that point. Naturally the first steps involved reducing production. In 1933 agriculture had enormous surpluses of wheat, cotton, to-bacco, and hog products, which had accumulated as a result of wartime expansion, economic nationalism, strangled foreign trade, the disappearance of foreign markets, and reduced domestic consumption. Prices had fallen far below costs. Merely to avert farm ruin, it was imperative to eliminate the surpluses. As matters then stood; production control seemed to be synonymous with crop reduction. But it was never contemplated that reduction, once started, should be

continued indefinitely. The adjustment principle applies not only on the downturn; it may regulate production to a stable or to a rising demand, and may maintain a good balance among farm enterprises. After lessening the bad effects of past mistakes, it may help to prevent new mistakes. It would be a serious mistake to reduce farm production constantly. Such a course would raise prices temporarily, but would restrict consumption, and create new farm competition at home and abroad.

End of Emergency Adjustments in View

As a matter of fact the end of our period of emergency adjustments, of drastic reductions in the farm output, is coming into view. In the case of some commodities, such as wheat, corn, and hog products, the domestic surpluses have largely disappeared, as a result partly of crop control and partly of weather conditions. As we advance in the adjustment of supply to existing demands, the basic principle of the Agricultural Adjustment Act stands out more clearly. It is production adjustment, which does not mean reducing the production of everything, but producing different commodities in the proper amounts and proportions. Sometimes we need reduction, sometimes expansion. As markets improve, farmers must be ready to increase their output. In doing so, however, they must keep step with the growth of demand and not run ahead of it. They must be on guard against piling up new surpluses. Cooperative action as prescribed in the Agricultural Adjustment Act affords the means.

Adjusting production downward when demand falls is not new. It is the normal, and in fact, the compulsory course. Industry follows it more generally and more successfully than does agriculture. Manufacturers immediately check or cease production when they can no longer sell their goods. They do so largely at the expense of labor, which loses its employment. Agriculture cannot quickly readjust its production downward for reasons familiar to everyone. Disused farms suffer more than disused factories. Planting and livestock breeding are annual matters; factory production can be adjusted almost from day to day. Also, farmers acting individually work at cross purposes. And then, too, when prices fall, some farmers try to recoup by having more bushels or bales or head of livestock to sell. Cooperative planning under Federal guidance can in part overcome these difficulties. It provides a definite mechanism through which farmers can work together for the control of production. Even with this assistance, however, farmers cannot regulate their output as accurately as can manufacturers. Agriculture cannot create scarcity at will, because the motive to keep men and land out of production weakens as surpluses disappear.

Need of Permanent Control

Essentially, agriculture needs production control to prevent the mass swings that lead to recurring cycles of over and under production. Adopted as an emergency device, a means for averting irremediable disaster through quick, concerted reduction of output, the

control principle has nevertheless permanent as well as emergency uses. This we can infer from a glance at the conditions that existed in agriculture long before the present depression. Both before and after the war, recurring cycles in production blocked steady farm prosperity. Adjustment to demand through blind competition caused farmers to rush in and out of different enterprises. Whenever any crop showed a profit, the producers grew more until the profit had been stamped into the ground. They did so to the greatest extent during and after the war; but under so-called free competition they always do so to some degree. Cooperative adjustments offer a means of correcting this normal handicap, as well as of dealing with abnormal surpluses. This use of the adjustment principle is the natural sequel to the emergency adjustments.

We can see the need by glancing at the record of some past production cycles. Thus the hog cycle carried hog slaughter from 62,-000,000 in 1920 up to 80,000,000 in 1923, and then down to 66,000,000 in 1926. In the meantime hog prices varied from below \$7 a hundred pounds in 1923 to \$14 in 1926. The beef cycle carried cattle slaughter from 12.000.000 in 1921 to 15.000.000 in 1926 and then down to 12.-000,000 again in 1928. Steer prices increased from \$9.20 a hundred pounds in 1926 to \$15 in 1928. A new upward movement in cattle numbers accounts partly for the low cattle prices of recent years. Wide swings in potato production caused prices to fluctuate widely. Between 1926 and 1928 the production increased from 323,000,000 to 427,000,000 bushels and the farm price per bushel declined from \$1.42 to 62 cents. Great swings in cotton acreage were common. From 1922 to 1926 the cotton acreage jumped from 34,000,000 to nearly 49,000,000. The farm prices for cotton varied from 23 cents to 12½ cents a pound in 1926—a very low price for that time. Many other products showed similar fluctuations in production and prices.

Farming would return to these erratic and senseless swings if we dropped the principle of cooperative adjustment. The swings due to weather are wide enough without having them further complicated by human miscalculation. Without means of coordinating their production, farmers could not for long keep a satisfactory balance between production and consumption. They can do so with the machinery provided in the Agricultural Adjustment Act with no risk that production control will lead to monopoly. There are two very strong safeguards: (1) The natural desire of farmers to take advantage of real opportunities for profit; (2) the fact that supply is only one of the factors that determine price. Demand is equally potent. This is particularly true of dairy products, fresh fruit and vegetables, and meats. Cotton prices vary with demand about as much as with supply. In the case of wheat, potatoes, and rice, supply seems to be the dominating price-making factor. But even in the case of these commodities there is a limit to the extent to which farm income can be influenced through supply adjustments. Farm income depends vitally on consumer buying power, and gains hereafter will depend increasingly on industrial recovery. Agriculture cannot achieve prosperity by itself. Such measures as the housing act, the bankruptcy measure to scale down impossibly heavy debts, the Reconstruction Finance Corporation's loans to industries, and recent changes in the N. R. A. price policies are very important to farmers.

Fair Adjustment Retains Consumer's Good Will

That farm recovery depends essentially on adjusting production to market needs rather than always on cutting it down appears in other ways. Removing surpluses benefits both producers and consumers. It restores fair exchange value to farm products and enables farmers to buy nonfarm goods. Consumers gain nothing in the long run by getting farm goods at less than cost. In one form or another they have to pay the full bill eventually. Agriculture must be maintained; and to maintain it the prices paid for farm products must cover the costs. Consumers do not escape this necessity by not paying the necessary prices immediately. They simply postpone the payment to their disadvantage. What they save on current prices they have to make up in the future. This is so generally recognized that public opinion almost unanimously approves reducing production to remove surpluses. It would not equally approve adjustments toward scarcity. Nonfarmers would instantly rebel, and with reason. for it is one thing to use the power of the Government to win justice

for agriculture and quite another to use that power unfairly.

Furthermore, the methods permissible under the Agricultural Adjustment Act do not lend themselves to the creation of scarcity. They make a distinction between the cooperator and the noncooperator in production adjustments. Through a benefit payment on his allotted share of the domestic production, the former receives a greater net income than the latter. In wheat, for example, cooperators reduced their acreage by 15 percent in 1934. With an average yield of 11 bushels, and a farm price the same as last year's, the cooperating farmer stands to get \$855 from 85 acres, while the noncooperating farmer will receive only \$814 from 100 acres. In 1933 the cooperating cotton farmer growing 75 acres received about \$1,707 for the lint. For the lint from 100 acres the noncooperating farmer received only \$1,663. With hogs at an average farm price of \$11 per head, the cooperating farmer, after reducing his corn production by 25 acres and his hog production to 112 head, would take in \$1,938 for his hogs. The noncooperator would receive only \$1,650 for 150 head. In the case of burley tobacco at present prices the signer gets \$750 for the product of 6 acres whereas the nonsigner gets only \$584 for the product of 10 acres. In addition, the cooperating farmers save on fertilizer, twine, and other expenses of production. Obviously, however, the relative advantage would diminish were production reduced enough to send prices skyrocketing. In that event the noncooperator would make more on full production than the cooperator would on restricted production. Soon there would be a new surplus. To reduce production excessively would put a premium on noncooperation, and wreck the project.

Essentials of Permanent Recovery

As already noted, the towering export surpluses are mostly gone. But the 50,000,000 acres formerly devoted to production for the foreign market, though mostly held out of use in 1934, are still in farms. We must not forget the existence of these surplus acres. Normal growing conditions, in the absence of Government help in agricultural adjustment, would build up the farm surpluses again in 2 or 3 years. For the time being, however, it is necessary to focus our attention largely on the disappearance of the farm surpluses, and on the resulting improvement in agricultural prices, particularly in the prices of the great export crops. To the extent that current price improvement is due to the drought it is impermanent. What

are the requirements of permanent farm recovery?

One of the outstanding long-time objectives of the national administration is to lay the foundation for an era of abundance. It is therefore essential that the Agricultural Adjustment Administration, in mapping its policy for 1935 and 1936, should consider to what extent agricultural and national prosperity can be advanced by a restriction of the farm output greater than that necessary to compensate for loss in foreign markets. Can true prosperity be had for agriculture or for the country as a whole by creating domestic shortages or continuously restricting production? Ninety percent of the farmers will say no. Yet some farmers may come to believe

that their prosperity depends on man-made scarcity.

In the emergency we had thoroughly unbalanced price and production relationships between agriculture and industry. Prior to 1933 agriculture did not reduce its production appreciably, but city industries reduced their production greatly. From 1929 to the spring of 1933 farm production dropped only about 6 percent while farm prices dropped 63 percent. In the same period the output of farm implements dropped 80 percent, of motor vehicles 80, of cement 65, of iron and steel 83, of auto tires 70 percent. Yet with these great restrictions of industrial output there was relatively little reduction in industrial prices—farm implements dropped only 6 percent in price, motor vehicles 16, cement 18, iron and steel 20, and tires 33 percent. The search for maximum profits was tending to develop a "scarcity economics", in which perennially the output of industrial production was reduced unduly, while prices remained so high that many consumers had to stay out of the market.

By the spring of 1933 the whole relation between agriculture and industry was thoroughly out of adjustment. Agricultural production was practically as high as ever while industrial production was at an extremely low level; for prices the situation was reversed—agricultural prices were away down, yet industrial prices had dropped relatively little. The basic recovery problem was to raise industrial production without raising those industrial prices which had not fallen, and at the same time to raise agricultural prices without reducing production beyond the need to compensate for the decline

in the foreign market and eliminate surpluses.

Since May 1933 agriculture has had the help of the Government in controlling production for the purpose of raising prices. The Agricultural Adjustment Act states that the aim of production control is to restore agricultural prices to their fair relationship with other prices and to continue such adjustments as will maintain that balance. During the past year drought and agricultural adjustment together have largely taken care of the surpluses. This has brought prices to the farmer a long way back toward parity yet without as yet curtailing domestic consumption.

Limitations of Production Control

There is reason to doubt whether agricultural income as a whole can be restored completely to parity merely by production control. While farm prices might be further raised by restricting domestic consumption along the lines of "scarcity economics", it is doubtful if this would appreciably raise farm income. One of the major elements in the restoration of agricultural parity is an increase in the purchasing power of the industrial population. A second major element is a reduction in the prices of industrial products that have advanced too far. When the industrial production and pay rolls are increased the industrial population is in a position to buy more food at parity prices. When industrial prices are lowered the farmer is in a position to buy more industrial goods with his money Thus, higher farm income and a higher standard of food consumption for the industrial population both turn on the employment and purchasing power of the industrial population. The farmer's great need now, as he continues his efforts to produce a balanced output, is that of getting full employment to the industrial population in order that consumers may be able to pay fair prices for higher consumption. Necessary as it was to meet the curtailed foreign markets and the surplus crisis of 1933, reduction in output is only a very partial and paradoxical answer in the long run to the crying need which is briefly expressed in the phrase, "balanced abundance.

The problem is to retain fair and reasonable profits without falling into the pit of "scarcity economics." As long as farmers had no power to control the total production or price of their products they were not seriously concerned with the problems of "scarcity economics." But now that farmers enjoy powers which are fairly comparable with those of city industries with respect to production and price control, it becomes necessary for all of us to spend more time thinking about the road to "balanced abundance" instead of

"competition for profits induced by scarcity."

SOCIAL COSTS OF FARM ADJUSTMENT

Amid the rush of events connected with farm readjustment, it is difficult and yet important not to be overwhelmed by things immediate. We think about farm prices and farm incomes. We want to narrow the spread between actual and parity prices. And we judge the success or failure of crop control accordingly. But this is an inadequate test. It reckons only receipts and ignores expenses. There are costs to consider as well as returns. These costs, as nearly as possible, should be estimated in terms human as well as monetary, social as well as economic. Moreover, they should be compared with the probable costs, in similar terms, of any other available means of dealing with the farm problem. Readjusting production is necessary for lack of means to increase the demand. If we increase the purchasing power of the domestic market or of the foreign market or of both together, crop restrictions can be relaxed. Whichever course we finally adopt, it will involve costs, which will fall not wholly or even largely on any one group, but on the entire Nation. Both justice and expediency urge us to compare the alternatives.

Among the costs of readjusting production downward, which we should consider before figuring the costs of widening the market, there are intangible elements. Some of these may prove very important. Prominent among them is the social, as distinguished from the administrative, cost of regulating agriculture. Some call it regimenting. It is well to call a spade a spade; but the term "regimentation" implies compulsion from above, whereas the farm adjustments in which we are engaged depend essentially upon the choice of the participating farmers. Strictly, the adjustment of farm production under Federal guidance involves not regimentation but merely social discipline. But this discipline may carry us far along new paths if we do not find an efficient substitute. It will involve unexpected and incalculable costs.

For example, it will involve a restriction of agricultural opportunity. Farmers may not produce as much of certain things as otherwise they would. Men not now in farming may not enter it unconditionally. The Bankhead Law penalizes the production of cotton above a certain quantity; and the Kerr-Smith Act applies a similar principle to tobacco. Processing taxes affect the conditions under which cotton, wheat, tobacco, and corn and hogs may be produced. Milk agreements help existing dairymen, at the cost of a restraint upon new competition. These are intended consequences. But persons kept out of agriculture may properly demand compensation. The regulation of agriculture for the benefit of insiders creates responsibilities toward outsiders. It involves intangible costs, not the least of which is a national obligation to protect all the groups affected.

No Escape Through Ruthless Competition

The alternative course is the competitive elimination of men and acres. This would mean endless distress, urban as well as rural, for men driven off the land would demand doles. Moreover, it would not obviate the need for social discipline. It would increase the need. Piling agricultural unemployment upon urban unemployment would create an immense new problem of poor relief, which would necessitate regimenting the recipients. It would flood the labor market, so that the Government would be forced to regulate it. We could not avoid economic regulation merely by not doing what we are now doing for agriculture. We might get a different kind of regulation, but that is all. Only by creating more employment, both in agriculture or in industry or in both, can we remove the need for economic controls. Returning agriculture to ruthless competition is not the way.

Meantime, pending the discovery of means adequately to revive demand, we must reckon the costs of regulation. Adjustments in one farm enterprise necessitate adjustments in others. Land can seldom be left idle. To withdraw land from one crop usually means putting it into another; if not into a competitive cash crop, then into something that will affect the balance of production eventually. Cornland planted to legumes will become more fertile. Land taken out of cotton or tobacco may produce food for the farm family, and thus affect the market for foodstuffs produced commercially. Agri-

cultural regulation tends to become general, and to involve related industries such as flour milling, meat packing, and dairy processing. Withdrawing submarginal land from production creates additional responsibilities. Even partially to refuse men access to the land obli-

gates the Nation to offer alternative opportunities.

On established farms, regulation involves an operating cost. It affects the size of fields, the use of machinery and labor, the intrafarm crop balance, and the relation of the farm overhead to the total income. Against the gain in prices, this item must certainly be reckoned. To reduce production greatly, without raising the unit costs, is extremely difficult. Extensive central planning interferes greatly with established farm practice, and obliges farmers to learn new ways. As Mark Twain said, there is no proficiency without apprenticeship, and no pay for apprenticeship. Regulating agriculture hampers its movements and checks enterprise. This is a debit item not to be ignored. Compared with such intangibles, the money costs of farm adjustment are secondary.

Economic Democracy

Viewing these restrictions and social costs, many honest thinkers believe our farm programs conflict with the essentials of democracy.

If that is the case, they should be dropped.

But man's right to live transcends all other considerations. In the present state of the Nation, we must enlarge our idea of democracy, or risk losing what democracy we have. A purely political democracy would not survive a complete economic breakdown in the United States any more successfully than it has done elsewhere. The farm program looks toward an economic democracy thoroughly in harmony with our political democracy.

Farmers demonstrated conclusively that they wanted the Agricultural Adjustment Act. Through the Congress, the country concurred. The administration obtained the support of large majorities before putting any of the acreage adjustments or marketing agreements into effect. When farm opinion failed to unite on a proposed

dairy program, the administration withdrew it.

Farmers themselves largely administer the adjustment programs through county control associations. These bodies help to make as well as to administer adjustment policy. Thoroughly democratic in form and spirit, the associations are effective instruments in economic self-government. They began by adjusting county and individual allotments. They were concerned at first about getting Government checks out to farmers as quickly as possible. This pre-occupation soon gave place, however, to a deeper interest in the purposes of the whole undertaking. The committees now study crop supply and demand conditions, and price relationships. They bring general economic information to bear on local farm problems. They are helping the administration in taking a referendum on new cornhog adjustment plans.

These local associations cannot finally formulate and administer national programs. That duty logically belongs, after all groups have been consulted, to the adjustment administration. But without the help of the county associations, the program could not be made effective. In thus decentralizing administrative work, and at the

same time creating new channels through which farmer opinion may find expression, the Agricultural Adjustment Act promotes true

democracy.

As is well known, participation in any acreage-adjustment program was originally voluntary. Later, under special legislation relating to cotton and tobacco, features penalizing noncooperation were introduced. Farmers themselves demanded this change. The Agricultural Adjustment Administration preferred to keep all programs essentially voluntary. It is unnecessary to coerce small

minorities, and difficult to coerce large ones.

There is a worse danger to democracy than the extension of democratic principles to farming. Failure to solve economic problems is a worse danger. Such failure leads to class strife, and class strife to civil war. In civil war, whatever the outcome, democratic government disappears, at any rate for a long time. Recent history shows that at a certain point of misery and destitution nations cease to think about liberty, and think only about bread. Then they are ripe for dictatorship. In the United States we have an opportunity to retain our liberty and to strengthen our democratic institutions, while at the same time improving our material circumstances. We can do this by enlarging our concept of democracy and giving it scope in economics as well as in politics.

The exact methods of achieving economic democracy are by no means settled. How far the principle of majority rule applies legitimately to the control of farm production is not yet established, either through experience or discussion. But we cannot rule it out in advance as being inconsistent with democracy. We should certainly give the benefit of any doubt to the voluntary principle, while not regarding that principle as absolute. And we should encourage discussions, far and wide. We should also consider every alternative

to the present adjustment programs.

FOREIGN TRADE IS ONE ALTERNATIVE

One alternative is the recovery of foreign trade. What will an effort to accomplish that entail? American agriculture was developed for trade with the world. Only in international trade can it freely move. Foreign buying of American farm products, however, requires foreign buying power in the American market. Such buying power existed before the war because foreign countries, principally in Europe, had invested heavily in American securities. During and after the war it existed because we lent money to Europe. Neither of these means of restoring our farm exports is likely to be quickly reestablished. There is another means. We may offer foreign countries, particularly European countries, a market in the United States for certain products, in exchange for a market for American wheat, cotton, tobacco, hog products, and fruits. We may lower our tariff wall, in return for a better market abroad; opening the door to foreign goods may displace certain domestic articles. That is the first cost to be considered. Against it must be figured the probable value of the compensating benefit.

What it will cost American industry to share the domestic market with foreigners depends partly on the nature of the goods imported, and partly on the amount of domestic purchasing power available. Selected goods could be imported liberally into a prosperous America, without hurting the American manufacturer. That we know from what happened before the depression. In the calendar year 1929, during the greater part of which business was active in the United States, we imported merchandise to the value of \$4,399,000,000. Exports exceeded this figure by \$842,000,000. For the great bulk of the exports we took payment in imports, and no one complained. Because we did so American industry had more business than it could have had otherwise. In the ensuing depression imports and exports declined together. Thus in 1932 the merchandise imports totaled only \$1,323,000,000; but the exports were down also—to \$1,612,000,000. Buying less abroad did not give us proportionately more business at home. Conversely, an increase in imports now would not cut down but on the contrary would increase our total business. The exports would increase with the imports.

But the foreign-trade program would involve the risk of producing results other than those expected. We cannot know in advance the probable effect on prices and employment in industry. Nor can we foretell precisely the compensating benefit to agriculture. Asking industry and labor to make sacrifices for agriculture demands some assurance that the farmer will benefit. The purchasing power which foreigners would obtain in the United States market were they permitted to sell more goods here might be left on deposit, or invested in American securities, or devoted largely to the purchase of nonagricultural goods. That would leave unchanged the need to regulate agriculture. Formerly, when Europe had the means to do so, it bought farm goods heavily in the United States. Will

it do so again?

Changing Relationship of the Hemispheres

This question does not admit of a dogmatic answer. The relationship between the Old and the New World has changed greatly. In the nineteenth century, when the United States was Europe's bread basket, this country took European goods readily in exchange for its cereals, meats, and fibers. It needed what Europe could supply. The need is smaller now. Other agricultural surplus countries, notably Canada, Argentina, Australia, and India, have more need of Europe's industrial goods. Against the competition of these countries, backed by their willingness to buy where they can sell, the United States must struggle. We cannot fully overcome this handicap merely by lowering our tariffs. Spontaneous reciprocity has advantages over the contrived variety. The cold fact is that while we need Europe greatly as a market, we do not need it greatly as a source of supplies. This is a hurdle to be leaped and not evaded.

Another difficulty is Europe's battle for self-sufficiency. Great Britain is relying more on Empire sources of foods and is encouraging Empire-grown cotton. France is practically self-sufficient in foods; Germany is nearing self-sufficiency. Last year Germany produced a slight excess of carbohydrates over its domestic requirements and about all the proteins it required. In fats, however, it remained heavily dependent on imports. Italy has forged ahead in food production but still depends upon imports for 13 to 18 percent of its food supply, measured in calories. The great Italian

deficit is wheat. Even countries like the Netherlands and Belgium, which cannot become self-sufficient in foods, buy abroad less than they would if they could export factory goods freely. But Europe is getting used to this increased self-sufficiency and has vested interests therein. Enterprises fostered by it cling to life. They have powerful defenders.

Fortunately, a change would benefit both hemispheres; for on both sides of the Atlantic the principle involved is the same. Each continent tries to live at home because it is difficult to sell abroad. In Europe the shoe pinches mainly industry; in the United States it pinches mainly agriculture. Shifting the pressure partly from one foot to the other in both hemispheres, simultaneously but in opposite directions, should ease the total strain. More international trade would create new purchasing power and would promote efficiency. Wresting trade from its natural channels, as we now do, adds to the operating costs of every farm and every factory. It violates the principle of comparative advantage. For every interest which the system nourishes, another interest, perhaps a more efficient one, dies. Europe has suffered more havoc of this kind than the United States, and has as much interest in discarding the strait-jacket.

Doubtful Value of So-Called "Self-sufficiency"

Europe's motives for working toward self-sufficiency are the fear of war and the necessity to correct an unfavorable balance of trade. Probably the economic motive is the stronger. National defense requires many things besides foods; many things which Europe must import, such as oil, rubber, cotton, and various minerals. In these articles Europe can never be self-sufficient. They can be stored; but first they must be purchased, and self-containment makes their purchase difficult. Increased self-sufficiency in foods does not really strengthen Europe's defenses, because it involves a reduced power to get other military necessities. But even in food, with the most prodigious efforts, Europe cannot become nearly self-sufficient. still has to import something like 500,000,000 bushels of wheat annu-The greatest possible progress in self-sufficiency cannot free Europe from the need of imports, or allow it to ignore a blockade. Group interests that profit from the movement toward self-sufficiency stress the insurance feature for more than it is worth. They want to offset the economic drawbacks, which are tremendous. Europe's struggle for self-containment is costly, painful, and relatively inefficient. It subjects the urban population to a fearful strain. Limiting the importation of foods makes the food supply less abundant, less varied, less nourishing, and less cheap. It forces Europe to depend increasingly on cereals in order to get more calories from the soil and to pay more for a poorer living.

That is only half the story. By refusing to buy foodstuffs abroad, Europe loses its market for factory goods abroad. Thus for a thoroughly illusory self-containment the people pay in a reduced standard of living and in reduced employment. A majority would welcome a chance to exchange industrial goods for foodstuffs. This would involve some agricultural readjustments in Europe, just as it would involve certain industrial readjustments in the United States. But these would not be excessive. By importing cereals,

including feed grains, Europe could raise more meat and dairy products, and maintain larger rural populations. In the United States, on the other hand, the resulting improvement in farm buying power would strengthen the manufacturer's domestic market. There would be more business all around.

Restored Trade Would Be Mutually Beneficial

Europe needs the farm goods we have to sell, and foregoes them only from necessity. The advantage to the American farmer of enabling Europe to buy here once more would be enormous. American agriculture depends far more on foreign trade than does American industry. From 1921 to 1930 this country exported more than 13 percent of its farm production, and the trade constituted about a third of its total exports. Moreover, this third represented only primary agricultural products such as wheat and flour and cotton. It did not include many agricultural products elaborately manufactured and exported as manufactured goods. Since 1929 our farm export trade has declined in value nearly 60 percent. Restoring it substantially, through some increase in industrial imports, would

give agriculture new life.

There would be no countervailing penalties upon industry. Broadly agricultural trade can increase only through an increase in the number of consumers. This is a consequence of the often-mentioned limitations of the stomach. Hence the only feasible alternative to the recovery of the agricultural export trade is the contraction of agriculture. No similar contraction of industry would result from an increase in industrial imports. For many industrial products the potential demand is boundless. Upon agricultural consumption the final limitation is physiological. Upon industrial consumption the final limitation is simply purchasing power. Whatever increases purchasing power increases the manufacturer's market. Hence the admission of foreign goods into the American market. since it would be accompanied by an increase in the purchasing power of the farmers, would handicap industry far less than the alternative policy of enforced farm contraction would handicap agriculture. Ultimately, indeed, the revival of normal international trade would permit great industrial expansion, besides removing much of the so-called "regimentation." Industry as a whole has as much to gain from this program as agriculture.

The long-continued decline in the value of our agricultural exports was checked in the marketing year 1933-34, in which domestic exports of agricultural products, exclusive of forest products, were valued at \$794,000,000, compared with \$590,000,000 in 1932-33, \$752,000,000 in 1931-32, and an average of \$1,792,000,000 during the 5 years 1925-26 to 1929-30. This gain in the value of exports resulted from the devaluation of the dollar and from the influence of reduced production on prices. The volume of exports, on the other hand, continued to decline. On the basis of 100 representing the average exports of agricultural products in the 5 years immediately preceding the war, the export volume in 1933-34 stood at 83. compared with

85 in 1932-33 and 98 in 1931-32.

RECIPROCAL TRADE AGREEMENTS

The Federal Government's program of reciprocal trade agreements looks toward the expansion of our foreign market for both agricultural and industrial products. Its success will depend on the extent to which we and the countries with which we seek to negotiate are willing to make reciprocal concessions. Foreign countries must give us substantial opportunities to sell them products, agricultural and industrial, which we can supply on a competitive basis. We must offer tariff reductions which will actually permit foreign countries to sell more of their products to us. Nothing can be achieved by making only such arrangements as will involve no sacrifice on either side.

It will be most difficult to get concessions on commodities which the importing countries produce in large volume. In such cases the foreign country, in making a real concession, must expect to contract its own production. It will naturally demand important compensating advantages. Of all agricultural products, it will probably be most difficult to obtain concessions on wheat. Even in the case of wheat, however, there is reason to hope that certain countries that have been striving for self-sufficiency and, in fact, in the last 2 or 3 years have actually achieved it, may conclude that such a course is uneconomical and likely to be disastrous eventually.

Foreign trade restrictions in hog products have fostered some increases in hog production in our foreign markets. Also, however, they have reduced consumption by raising prices. It should be easier to get concessions on hog products than on commodities the produc-

tion of which has been expanded more.

Opportunities With Fruit and Tobacco

The best opportunities for trade bargaining concern fruit and tobacco. Trade barriers in importing countries have not caused any great increase in the production of fruit either in the importing countries themselves or in countries whose exports are not affected. In many cases our fruit exports have been subjected to restrictions, not in order to protect producers of the same products, but because they are considered luxuries. They are either taxed heavily for revenue, even though in some cases a lower tax would yield a larger return, or are largely excluded from some countries that desperately need to balance their international payments and seek to do so through restrictions on imports.

Tobacco has always been heavily taxed, but the taxes in many cases have risen to a point at which they reduce consumption. In a few countries, in Italy for example, domestic production has been stimulated, and it will be difficult to regain the market we have lost. In other countries tobacco production is less important, and lower import taxes might well result in increased imports from the United

States.

Our cotton exports cannot gain directly from tariff bargaining. Most of the large foreign cotton-manufacturing countries do not produce cotton within their borders and only to a limited extent in their colonies. They are glad to get supplies at the lowest possible

cost. Only one country, Germany, has restricted imports of American cotton. Germany did so not for the protection of her domestic interests; on the contrary, German textile manufacturers suffered. The reason was entirely Germany's inability to pay for the necessary imports. Indirectly, however, cotton would benefit greatly from a revival of international trade.

Agreement Concluded With Cuba

Progress is being made in the organization of the tariff-bargaining work. Interdepartmental committees have been established on which this Department is represented. The State Department has announced an intention to negotiate trade agreements with many countries in Latin America and western Europe. Only one agreement has been concluded so far under the new tariff-bargaining law. This was signed with Cuba on August 24, 1934. In one fundamental respect it differs from the arrangements that may be concluded with other countries. In the Cuban agreement, the United States and Cuba grant to each other exclusive preferences on import duties which are not extended to other foreign countries. In general, under the terms of the tariff-bargaining law, the policy will be pursued of extending generally to all countries the concessions made on import duties by the United States. This is not true in the case of Cuba, to which we give preferences ranging from 20 to 50 percent, and Cuba extends to us preferences from 20 to 60 percent from the general duties applicable to other countries.

Concessions of Real Value to United States

The agreement with Cuba secures concessions that will be of real value to American agriculture. Lard is our most important agricultural export to Cuba. Only the United Kingdom and Germany have in the past surpassed Cuba in importance as a market for American lard. Our exports of this product to Cuba declined from 80 million pounds in 1929 to 11 million pounds in 1933. The principal factor contributing to this decline was the increase in the Cuban duty on lard from the equivalent of \$1.45 to \$9.60 per hundred pounds. In addition Cuba imposed a consumption tax amounting to \$1 per hundred pounds on lard. The total charge was practically prohibitive. By the terms of the agreement with Cuba, however, the Cuban duty on lard has been reduced to \$2.27 per hundred pounds; it will be reduced to \$1.86 on September 3, 1935, and to \$1.45 per hundred pounds on September 3, 1936. Cuba also agreed to eliminate the consumption tax by the last-named date. Similarly, favorable concessions were made on the duty on vegetable oils, notably cottonseed oil, which is an important item in our exports to Cuba. Cuba agreed to reduce the refined cottonseed oil duty from \$6.07 to \$1.36 per hundred pounds. Other agricultural products upon which substantial duty reductions or increased preferences were granted by Cuba were wheat flour, pork, potatoes, rice, and canned fruits and vegetables. Cuba also made substantial reductions in a long list of manufactured articles. These reductions, to the extent that they result in increased exports to Cuba of manufactured goods

and increased employment in our manufacturing industries, will

redound to the benefit of agriculture.

In return for these concessions on the part of Cuba, the United States agreed to a reduction in the import duty on sugar, a reduction in the duty on tobacco and rum, and seasonal reductions in duties on certain fruits and vegetables. In the case of sugar and tobacco the reductions in the United States duties applicable to Cuba are accompanied by import quotas which limit the quantity that Cuba can place in this market. The quota on sugar was provided for by legislation passed by the last session of Congress. The quota on

tobacco is provided for specifically in the agreement.

In providing for these quotas an important principle affecting the agricultural adjustment program has been established, namely, that with respect to products the production of which is being restricted or curtailed in the United States, there should be a corresponding restriction or curtailment in the importation of like products from foreign countries. This is a matter of logic. We cannot be in the position of reducing our own production in order to dispose of unwieldy surpluses and to obtain a fair return for our farmers and at the same time permit foreign countries to increase their exports to this market and take up the slack arising out of reduced domestic production. With respect to both sugar and tobacco, the agreement provides that if the adjustment program of the United States is abandoned, or substantially abandoned, the import duties will revert to those in effect at the time of the signing of the agreement.

The reductions in duty that Cuba has made, combined with an improvement in their purchasing power resulting from more favorable returns on their principal products, should permit the United States to regain a substantial part, if not all, of its lost market in

Cuba.

THE DROUGHT

The drought of 1934 was the worst ever recorded in this country. It extended over 75 percent of the area of the country and severely affected 27 States. It cut down the yields of food grains and of cotton, reduced tremendously the production of feed, forage, and pasture, and necessitated a heavy reduction in livestock numbers. Food supplies for the Nation remained sufficient. There were on hand large stocks of bread grains and of several other food products, the production of canning crops was above normal, fruits and vegetables were fairly abundant outside the drought area, and the supply of meat, dairy, and poultry products was adequate for the rest of the calendar year. Local supplies of certain food products, however, were short in many areas. Reflecting the shortage of feed grains and roughage, there will be a sharp reduction in market supplies of meat and other livestock products in 1935, even if the growing season should be normal. In the areas hardest hit farmers suffered a decline in their income. For the country as a whole, however, the drought affected farm income but little. Higher prices tended to offset the reduction in marketings, and farm income, including benefit payments, for the entire country showed a substantial increase over the previous year.

Beginning in the early spring, the drought first became serious in the Northwest. From eastern Montana, the Dakotas, and Minnesota it spread to the Southeast, to the South, and to the Southwest. By the end of May it had become the most extensive drought on record in this country. It was severe in part of the Ohio Valley and the central and upper Mississippi Valley, throughout the central and northern Plains, over most of the Rocky Mountain sections, and in the Great Basin of the West.

No Indications of Permanent Change

There are no indications, however, that the drought constituted a permanent change to desertlike conditions in the Midwestern States. The Weather Bureau's records suggest that extreme drought in particular regions may be expected to occur at intervals of 30 to 40 years. Rain or snowfall tend to run in alternating periods of above and below normal. Each period covers a long time, and the periods are not uniform in length. The trends show up clearly, however, when we study the records graphically, and draw curves to smooth out yearly variations. In the long run the precipitation records vary in a wavelike progression. The difference in the rainfall in the periods of comparatively heavy precipitation, as compared with that of the periods of lighter rainfall, is marked. Moreover, the trends are rather uniform from maximum to minimum and vice versa. For the central Mountain States the records show a well-marked tendency to decreasing rainfall during the last quarter of a century. On the other hand, in much of the South, especially the Southeast, until recently the tendency was toward heavier rains.

In the central Mountain area the last maximum appears for the 10 years up to about 1908, or about 25 years ago. Since then a 10-year moving average shows a rather regular decrease. Thus the average precipitation in Minnesota for the decade ended with 1933 was only a little more than 23 inches, as compared with an average of 29.5 inches for the 10 years ended with 1908. The later decade had nearly 30 percent less rainfall than the earlier one. In a region where the normal precipitation is rather small such a decline is obviously very important. Centering in Minnesota, this decline covered the northern Plains to the west, especially the Dakotas, and extended to the western part of the Lake region on the east. About midway between the long-interval rainfall depressions appear successive years of comparatively abundant rains. There is nothing to indicate that history will not repeat itself in this respect. In another temporary period, not now predictable, much heavier rains undoubtedly will

prevail.

Drought in the central valley began early last year. It did not immediately cause any general falling off in production, though we had a short wheat crop and a short hay crop for the country as a whole. But when the 1934 drought developed its results were far worse than they would have been had the season begun with normal moisture in the ground. Areas depending on irrigation water and all crops that need considerable subsurface moisture had a tremendous initial handicap. Snowfall was light in the western mountains during the winter of 1933-34. Streams dried up that had never dried up before, and lakes fell to record low levels. Supplies of irrigation

water failed and even supplies of water for livestock to drink failed

in many regions.

Fairly good June rains in the Dakotas and Montana came too late to save the crops. Spring wheat, other small grains, and hay were already ruined. The June rains did help the livestock situation and improve the range. Meantime in other areas the drought became worse. It struck the western part of the main Corn Belt a fearful blow just when the corn could stand it least. High temperatures, hot winds, and dryness hit the crop as it was beginning to tassel. Fairly good rains late in July and in August improved matters in the eastern part of the Corn Belt, in the Potomac River watershed, and in some dry areas east of the Mississippi. Nevertheless, corn

Iowa and west-central Illinois, corn for grain was practically a total failure. In Texas, Oklahoma, and Arkansas only the early planted corn produced grain.

The first half of August brought very helpful showers to most of the Ohio Valley area, and the last half of the month had much cooler weather, with substantial to heavy rains, in much of the Southwest, especially Oklahoma and Missouri. Moreover, during September wide-spread, generous rains effectively relieved droughty conditions, at least temporarily, over a large midwestern and southwestern area extending from southern Minnesota and Nebraska over the western Winter Wheat Belt. The rains were especially timely in conditioning the soil for seeding winter wheat over the most important sections of the belt.

Reduction of the Surpluses

Outstanding among the results of the drought was a great change in the farm-surplus situation. Normal wheat consumption in the United States to the end of the 1934-35 year, assuming neither imports nor exports, will reduce the wheat carry-over to about 156,000,000 bushels, as compared with an average of about 339,000,000 bushels in the preceding 5 years. The 10-year average previous to 1929 was 110,000,000 bushels. The cotton carry-over will be close to normal by the end of the 1934 season, though the drought was less responsible for reducing the supply of cotton than the acreage adjustment.

Production of corn, oats, barley, and grain sorghums was only about 63,000,000 tons as compared with an average of 101,000,000 tons for the period 1928-32. This reduction in the feed supply entailed corresponding adjustments in livestock numbers. The number of hogs fed for the marketing year beginning October 1, 1934, may be less than 70 percent of the number fed for the preceding marketing year. By next spring cattle numbers will be sharply

reduced, in the most rapid liquidation ever known.

Prices of many of the crops severely affected by the drought rose during the summer. Grain and hay prices advanced sharply. Cotton prices advanced when drought damage to that crop became apparent. Cattle prices did not respond immediately, because heavy marketing from the drought areas occurred. Other classes of livestock, except hogs, either failed to advance or declined in prices

through forced marketing. Hog prices improved significantly. Livestock products showed a quicker tendency to rise in price than livestock. Butter and egg prices strengthened notably. Ultimate effects of the drought on prices will be greatly different from the first effects. The prices of cattle, sheep, and poultry will undoubtedly advance after the forced marketing is over. The slower response of livestock prices to the drought will probably cause these prices to remain relatively high longer than other farm-commodity prices.

Drought Relief Action

The Government relieved farmers who had been made destitute. It bought starving cattle, shipped food, feed, and seed into the drought-stricken areas, assisted farmers in maintaining their foundation herds, and in digging or deepening wells, and provided employment. In various activities the Agricultural Adjustment Administration, the Federal Emergency Relief Administration, the Federal Farm Credit Administration, and other Federal agencies cooperated. Benefit payments for crop adjustments and funds available for the control of livestock diseases were important sources of relief. An important emergency step modified the planting restrictions on farms under A. A. A. contracts so as to encourage the production of

forage.

The cattle buying resulted up to the middle of October in the purchase of about 7 million cattle in 20 States. For these cattle the Government paid \$92,000,000. Formerly in times of severe drought the markets quickly became glutted with thin cattle. Farmers had to sacrifice many of their best animals. This year they did not have to force their stock upon the commercial markets at a heavy loss. The Government paid a fair price. Farmers were able to dispose of their older and less profitable stock, as well as calves and young cattle, for which they had insufficient feed. Had there been no drought, a reduction of some 4 million in cattle numbers would have been desirable. Nineteen hundred and thirty-four was the peak of the cycle in cattle numbers, and the heavy supply depressed the price. A large proportion of the cattle that had to be removed owing to the drought was no loss to the cattle industry. But as the drought grew worse it became necessary to go beyond this point and to speed up cattle purchases to the limit set by processing facilities.

However, the purchase of cattle meant that as many more were saved from starvation. Feed which the purchased cattle would otherwise have eaten became available to tide 7 million other cattle over

the winter.

Funds for the cattle buying came partly from an appropriation for a cattle-adjustment program under the Jones-Connally Act and partly from a special congressional appropriation of \$525,000,000. The Agricultural Adjustment Administration established a field head-quarters at St. Paul, Minn., and obtained the cooperation of extension directors, agricultural college leaders, and county agricultural agents. Accredited veterinarians, or local committees appointed for the purpose, appraised and purchased animals. Field agents of the Federal Surplus Relief Corporation took delivery of the animals and shipped them to be slaughtered.

For the cattle purchased the Government paid an average price for all ages of about \$13.50. The prices included a benefit payment to cattle producers free of all liens. The schedule was uniform for all States. Including the benefit payments, it ranged from \$12 to \$20 for cattle 2 years old and over, from \$5 to \$15 for yearlings, and from \$4 to \$8 for calves under 1 year. These prices were established as nearly as possible on the basis of what cattle would bring on the slaughter market, without any deduction for shipping and marketing costs. Thus the cattle-buying program brought the market to the farm. Six dollars of the price paid for 2-year-olds, \$5 of the yearling price, and \$3 for the price of calves constituted benefit payments. These benefit payments roughly equaled the shipping and marketing costs that farmers would have had to pay had they shipped their cattle to market in the usual manner. Farmers and their creditors alike generally found the arrangement fair and acceptable.

Purchase of Sheep and Goats

Most of the cattle purchased, except animals condemned as unfit for food, were delivered to the Federal Surplus Relief Corporation for slaughter and canning in commercial packing plants for later distribution to needy families. Some cattle were shipped to States where pasturage was available. Later, the Government launched a program contemplating the purchase of several million head of sheep and goats. It arranged to pay \$2 a head for ewes 1 year and over and \$1.40 a head for female Angora goats of the same age. Flocks came off the high mountain ranges 3 to 6 weeks early as a result of the drought. They moved into feeding grounds often entirely bare of vegetation. Supplies of hay and other feeds were scarce and dear. It was necessary, in order to avoid severe winter losses, to reduce the flocks from 30 to 60 percent. A Federal livestock feed agency was set up in Kansas City, to aid in the distribution of feed and forage. County committees surveyed feed needs in the drought areas and arranged with local dealers to order supplies.

Various other activities under the Agricultural Adjustment Act aided farmers in dealing with the drought. Of course, the drought had not been anticipated when the 1934 A. A. A. plans were being formulated. As it worked out in the end, however, more feed was available in 1934, in proportion to the livestock, than would have been available if production-control programs had not been in operation. These programs brought about an orderly adjustment in hog, cattle, and sheep numbers, and a net increase in forage-, pasture-, and hay-crop plantings. As a result, agriculture came through the season with about 6 percent more grain per grain-consuming animal, and with about 17 percent more hay per hay-and-pasture-consuming

animal than would otherwise have been available.

Without the programs, the production of feed grains would have been somewhat larger. But livestock numbers especially of hogs, would have been much larger. Without the adjustment programs, the volume of grain available per grain-consuming animal unit would have been about 1,040 pounds, as compared with 1,100 pounds that will actually be available or an increase of about 6 percent due to the A. A. A. programs. Encouragement given by the programs to hay production will make the current hay supply about 13 percent greater

than it otherwise would have been. In the case of hogs particularly, the adjustment programs show a substantial benefit. Hog production would have been much larger had the programs not been put into effect, and the enforced liquidation of surplus stock at very low prices would have involved severe loss. The hog programs averted disordered and expensive last-minute adjustments. Then after the drought appeared, if it had not been for the cattle- and sheep-buying programs, cattle and sheep prices probably would have fallen below the point at which they could offset marketing costs.

AN EVER-NORMAL GRANARY

One effect of the drought is to emphasize the importance of maintaining adequate farm reserves, particularly in regions subject to extreme hazards. In the pioneer epoch, farmers stored feed and hav against lean years as a matter of course. With the development of communications and of transportation, and with the resulting evolution of a more specialized and more commercialized agriculture, the practice declined. Farmers came to doubt that it paid. In the dry-land regions the newer system had obvious risks. These risks could be carried during the years of moderately heavy rainfall, the more easily because fairly good prices prevailed. The chance to lay by a money reserve weakened the motive to establish a commodity reserve. But the situation now is different. Against the combination of weather hazards and low prices, farmers need the protection of an adequate reserve with safeguards against any possible depressing influence on prices. Here, in conjunction with the crop-adjustment program; is an obvious responsibility of the Agricultural Adjustment Administration. Means should be developed to conjoin the adjustment of plantings with protection equally against crop failure and against the tendency of large stocks to depress prices.

Significance of Curtailed Foreign Outlet

Since 1933 the demand from abroad for American farm products has undergone no material change. Our exports of grains and livestock products have almost disappeared. We continue to export cotton and tobacco and fruits in large quantities, but the foreign market for these commodities is not what it was. In the case of all food products except fruits, we have still to think in terms of a sharply curtailed foreign outlet. As far as we can see for the moment, our emergency program and the first phases of our long-time program must be shaped toward reduced production for export. This may be less permanently true of cotton than of grains and livestock products. For the present at any rate, however, the cotton situation also calls for production adjustment.

But reduced production for export raises certain new questions. Adjustments nearer to domestic requirements need to be coupled with protection against crop failure. Farm reserves must be larger than the so-called normal "carry-overs" of predepression days. Formerly, when we produced heavily for export, carry-overs did not have to be large. It was simply necessary, in seasons of small production, to reduce the exports. In proportion as this automatic safeguard disappears, it becomes more important to maintain reserves

from season to season. Such reserves tend to stabilize both production and prices. Our emergency experiments have revealed more clearly the requirements of controlled production. One requirement is a method of absorbing the shock to markets which occurs when seasonal conditions violently disrupt the intended adjustment.

When production varies greatly, either through weather conditions or the action of farmers, prices fluctuate correspondingly, but not usually in a manner permitting farmers to break even. They lose more on the declines than they get back on the advances. This is largely because speculators intervene between the producers and the consumers. Speculation depresses prices excessively to farmers in seasons of surplus production, and keeps from them the full benefit of rising prices in seasons of low production. Too much of the consumers' dollar goes to nonproducers. Hence producers and consumers have a common interest in the control of both production and marketing.

We now have a fairly satisfactory mechanism for controlling acreage, and in the case of some crops for the control of marketing. We have had some experience with storage for the double purpose of insuring the farmer a satisfactory current price and of maintaining

reserves.

The Cotton and Corn Loans

In 1933 the Federal Government established the Commodity Credit Corporation. Up to the present it has lent money only on cotton and corn, and a small amount on naval stores, but the loaning facilities could be expanded to cover other storable commodities. The corporation obtains its funds from the Reconstruction Finance Corporation, which has made commitments of \$500,000,000 to it for

use in connection with the loan programs.

During the 1933-34 season, the basis of the cotton loans was 10 cents per pound. Borrowers agreed to participate in the 1934 cotton-adjustment program. The Commodity Credit Corporation loaned direct to cotton borrowers approximately \$60,000,000, and the banks and other lending agencies of the interior, who were authorized to participate in the loan program, loaned an additional amount of approximately \$60,000,000. The Commodity Credit Corporation agreed to buy in such paper as was offered it by the interior banks and lending agencies prior to July 1, 1934. The purchase of this paper brought the total loans made by the corporation up to a total of approximately \$102,000,000. It is estimated that more than 420,000 cotton farmers have been benefited under this program. Approximately 64 percent of the total amount loaned was liquidated by September 12. In 1934, the administration continued its cotton-loan program, with the loan basis increased to 12 cents per pound.

On corn during 1933-34 the Administration made loans to producers at 45 cents a bushel. About 270,000,000 bushels were sealed in farm cribs. The loan value was above the current market price of corn at the beginning of the season. Subsequently prospects of reduced corn production raised the market price, and farmers were therefore able to liquidate their loans at a substantial profit. Scheduled originally to end on August 1, 1934, the Government extended the corn-loan program to September 1. Up to September 15,

160,000,000 bushels had been released from storage.

As in the case of cotton, the Government will continue the cornloan policy to cover the 1934 crop. It has increased the loan value to 55 cents a bushel. This price, while below the market price in September, and below the price that is expected to prevail for the marketing season, gives farmers a means of keeping a supply of corn within their control. In a year of short supplies this is obviously an important consideration. On both cotton and corn the loaning policy has proved to be economically sound and helpful to farmers. It has furnished experience that will be valuable in creating the

ever-normal granary.

The corn loans, particularly, demonstrated the advantage of farm storage coupled with production adjustments. They removed from the market in 1933 the depressing effect of stocks present above current needs, and established a reserve, which the 1934 drought made invaluable. Under ordinary conditions the excess supply would have moved into commercial channels, beyond the control of the farmers. After the crop failure of 1934 they would have had to buy back the reserve at greatly enhanced prices. But instead of having parted with the surplus, they had simply borrowed against it. It remained available to them at no increase in cost, except the interest on the loans, for maintaining their livestock under drought conditions. Farmers were in a much better position to preserve their breeding stock than they would have been had their cribs been depleted in the usual way.

Necessary Size of Reserves

Drought years do not usually come in succession and crop adjustments must rest on the expectation of normal growing conditions. Nevertheless, the two seasons of drought through which we have passed raise urgently the question, "What should be an adequate reserve?" We used to consider 120,000,000 bushels a sufficient carry-over of wheat. Perhaps we ought now to plan for a normal carry-over of 200,000,000 bushels, and for much increased carry-overs of some other crops. Means must be developed, however, to prevent the additional stocks from depressing prices. Storage must be linked with production control.

Ordinarily heavy carry-overs reduce the price to producers. Agriculture had painful experience of this fact as a result of the stabilization operations of the Federal Farm Board. Storage by itself, even by the Government, is ineffective. Withholding supplies does not support prices for long if production increases unduly. This country's efforts under the Farm Board to stabilize wheat and cotton prices simply by storing surpluses demonstrated that not even a powerful Government, with ample funds, can bolster prices against

overproduction.

With borrowers obligated to cooperate in crop adjustments, the Commodity Credit Corporation could make loans on various storable crops, just as it has done on cotton and corn. Lending at a higher percentage of the current value than is usual in private or Government loans would insure wide-spread participation by farmers. In years of large production, surpluses would be stored on terms fair to the farmers, and yet not involving risk to the Government. The contracts with borrowers for the control of production the following

season should prevent the price of the goods from falling below the

loan figure. Hence the loans would be reasonably safe.

This system would have many advantages. It would protect consumers against possible shortages and tend to stabilize production and therefore prices. There is, of course, always a chance of surplus crops 2 or more years running. But even in that case the evernormal granary would absorb the market shock. It would simply be necessary, following two or more heavy crops, to reduce the acreage sharply. Moreover, the ever-normal granary would furnish a means of regulating the production of livestock. Growers could draw on the stored feed to stabilize livestock numbers. We may have here the beginning of means to control the livestock-production cycles.

Coordinating storage with crop adjustment would have another advantage. Stored commodities could be used in lieu of cash benefit payments. Part of the stored surpluses would probably become the Government's property. This part could be released to farmers as compensation for crop adjustments. Farmers would thus have the possibility of a speculative profit, the amount of which would depend largely on their success in controlling production. Giving the farmer a certain quantity of wheat, instead of a certain amount of cash as benefit payment for crop control, would bring home vividly to the producer's mind the relation between supply and price. It would create another motive for the crop adjustment.

Plan Would Not Harm Business

As a part of the program the Government would need to guarantee private traders against the apprehension of sudden disruptive releases of stored goods. Commodities would be released only with due regard to prevailing market conditions. Full information as to the storage program would be made public. In the 18 months during which the Agricultural Adjustment Administration has functioned it has played square with business. It will continue to play square. It will not spring any surprises on the market. It will coordinate the storage and adjustment operations so as to promote the ultimate objective of the Agricultural Adjustment Act—the restoration of farm commodity prices to the pre-war parity. Flexibility is essential in adjustment to a changing situation. But keeping a program flexible need not mean letting it become sudden, spasmodic, or harmful to business.

FARM RESULTS OF RECOVERY POLICIES

Following the passage of the Agricultural Adjustment Act, the position of agriculture improved greatly. Farm-commodity prices in September 1934 averaged 102 percent of the pre-war level as compared with a low point of 55 percent reached in March 1933. Gains in farm-commodity prices were partly offset by increases in the prices of commodities bought by farmers. From 1932 to 1933 the index of prices paid by farmers advanced 2 percent. From March 1933 to September 1934 it advanced 26 percent. However, the exchange value of farm products in September 1934 was 81 percent of the pre-war level as compared with only 55 in March 1933.

In 1932 the average farmer, after paying interest, taxes, and the expenses of production, had nothing left as a return for his capital and management. In 1933, for the first time since 1929, he had left a small net balance after writing down his capital structure. Income from marketings in 1933, with benefit and rental payments added, exceeded that of 1932 by 16 percent, and prospects are for an additional gain of 19 percent in 1934.

The total cash income of farmers from the sale of farm products for the calendar year 1934, including rental and benefit payments and income from the sale of cattle, sheep, and goats to the Agricultural Adjustment Administration, is estimated at approximately \$6,000,000,000. This estimate is based upon an analysis of farm production in 1934, probable prices and marketings of farm products during the last 5 months of the year, and cash income during the first 7 menths of the year as previously estimated. The estimated cash income for 1934 is 19 percent larger than in 1933 and 39 percent over 1932.

Estimates of cash income from farm marketings on a calendar year basis from 1924 to 1934, including rental and benefit payments in 1933 and 1934, are as follows:

1924 1925 1926 1927	10, 324, 000, 000 9, 993, 000, 000 10, 016, 000, 000	1930 1931 1932 1933	5, 899, 000, 000 4, 328, 000, 000 5, 051, 000, 000
1928 1929	10, 289, 000, 000	1934	

Farm Realty Values

In the year ended March 1, 1934, the average value of farm real estate for the United States as a whole showed an increase. It was the first year since 1920 to record a gain. This was good evidence of farm improvement; for farm-land values depend ultimately on

farm earnings.

From the low point of 73 percent of the pre-war level, to which farm-real-estate values declined in the preceding year, the average value for the country rose in the year ended March 1, 1934, to 76 percent of the pre-war level. The improvement was not distributed equally in all regions. Roughly, the regional changes reflected differences in farm earnings. The greatest relative increases occurred in the South Atlantic and South Central States. Improvement in farm commodity prices and in farm incomes was a leading cause of the upturn in farm-real-estate values. The fact that the gross income from crops increased much more than the gross income from livestock and livestock products was an important reason for the uneven distribution of the gains in farm land values.

This all around improvement is the result of many factors, the separate influence of which cannot be measured. Undoubtedly, however, the recovery program launched by the National Government, with its threefold effort to adjust the general price level through monetary action, to bring farm production more nearly into balance with the demand, and to refinance and otherwise to relieve farm debt

is by far the most important.

Effect of Monetary Policies

Revaluing the dollar benefited agriculture because prices of the raw-material farm products responded promptly, while prices of many of the things that farmers buy increased more slowly. The Government suspended gold payments on foreign account on April 19. 1933. Other steps followed under title III of the Agricultural Adjustment Act, which gave the administration emergency monetary powers. Between April 15 and July 15, 1933, the farm price of cotton advanced 75 percent and the farm price of wheat 92 percent, but this rise was partly speculative and some reaction followed. A revival of textile manufacturing, and the expected crop adjustment, helped the price of cotton. In the case of wheat, the prospect of a short crop was a factor. In both cases, however, the new monetary policy was obviously an important influence, as may be inferred from the advances that took place simultaneously in nonagricultural raw materials. The effect of the devaluation on prices of farm products did not cease with the subsequent stabilization of the dollar at a new value. Farm commodities that had not responded immediately to devaluation responded slowly. As a result of devaluation, agriculture has gained in power to buy nonfarm goods and also in power to meet debts and taxes.

Results of Crop Controls

The first year's cotton program simply prevented an increase in the surplus. Farmers, however, saved the extra expense of carrying the full-planted acreage to harvest. They received an average farm price of 9.7 cents per pound for their crop, and rental and benefit payments besides. From the lint the growers received about \$633,000,000 as compared with \$424,000,000 realized in 1932. In addition they received \$163,000,000 in rental and benefit payments. Consequently the income of cotton farmers from lint in 1933 was about 88 percent more than in 1932. About half the increase may be properly attributed to the activities of the Agricultural Adjustment Administration. By the end of the 1934 season the world carry-over of American cotton will be close to normal, and higher prices for American cotton should prevail.

Activities of the Agricultural Adjustment Administration helped to increase the income of wheat growers. The cash income from wheat marketings in the 1933-34 season (exclusive of benefit payments) was about \$267,000,000 as compared with \$195,000,000 in 1932. Growers obtained this amount from the sale of only 368,000,000 bushels, whereas marketings the previous season totaled 524,000,000 bushels. Price gains more than sufficed to offset the reduction in the 1933 marketings. Benefit payments added \$98,600,000, so that the total cash income from wheat for the 1933 season amounted to \$366,000,000, an increase of \$171,000,000 over that of the previous

In the 1934-35 season farmers will market some old wheat carried over from the previous seasons, and also the new crop, at prices which may give them an income a little larger than they received for wheat during 1933-34. There will also be benefit payments.

In the case of corn and hogs the full benefit to farmers from the activities of the Agricultural Adjustment Administration has not vet been realized. Prior to the midsummer of 1934 prices of hogs and the income therefrom did not improve significantly. Nevertheless. distinct advantages from the adjustment programs may be recognized. By purchasing pigs and sows in the fall of 1933, and subsequently by making large purchases to provide meat for relief, the Government stabilized the market through the winter season. By placing a large quantity of corn under seal for loans, it helped to conserve the supply of corn, and at the same time to slow up livestock production. Hence the corn-hog program will realize its greatest benefits within the next 12 months. Already prices are reflecting the prospect of better adjusted supplies, and in addition to higher prices farmers will receive large benefit payments. Considering 1933 and 1934 together, hog producers should receive, with the benefit payments, some net gain in income. Still more important, the supply situation will be adjusted to a more profitable basis.

The tobacco program increased the growers' receipts from the 1933 crop by about \$50,000,000. In addition, growers received \$28,000,000 in rental and benefit payments. The total income of farmers from tobacco during the marketing year 1933-34 was approximately double that of 1932-33 and nearly equal to the average for the last 10 years. Tobacco farmers received an increased proportion of the

consumer's tobacco dollar.

More than 90 percent of the tobacco growers of the United States and Puerto Rico are operating under production-adjustment contracts. The 1934 crop was approximately 25 percent smaller than that of 1933 and was as much below the average annual world consumption of American tobacco as last year's crop was above that level. For the first time in several years the returns appear to be remunerative to tobacco growers.

Farm Debt Relief

Great benefit to agriculture has also resulted from action taken under the Emergency Farm Mortgage Act of May 12, 1933, and the

Farm Credit Act of June 16, 1933.

Formed by Executive order of March 27, 1933, the Farm Credit Administration merged a number of existing Federal credit agencies and created a central administration. This organization administers the provisions of the Emergency Farm Mortgage Act, and also of the Farm Credit Act, which provides new facilities for production and marketing credit and for cooperative credit. The Farm Credit Act, supplementing the Federal Farm Loan Act of 1916 and subsequent legislation, provides a complete credit service for agriculture which is designed for permanency.

In the prolonged depression, farm credit had virtually collapsed. Many credit institutions were bankrupt, and more than 40 percent of the banks in the country closed their doors between July 1928 and July 1933. The restriction of credit was more pronounced in agricultural areas than elsewhere. Consequently the Farm Credit Administration reorganized the facilities of the Federal land bank

system and began refinancing farm-mortgage debts.

Recognizing that depression values did not represent the true worth of farms, the Farm Credit Administration inaugurated the policy of appraising farms on the basis of normal values, and through its refinancing operations provided quick relief to farmers and overburdened lending institutions. Frozen credits were melted and business confidence in agricultural areas revived.

Farm-mortgage debts in the United States in 1932 constituted about \$8,500.000,000, out of a total farm-debt burden of probably \$12,000,000,000. Private institutions and individuals held a large part of the farm-mortgage debt, while commercial banks carried both farm-mortgage and short-term loans in large amounts. The total farm debt in 1932 amounted to nearly three times the total gross farm income of that year and was about equal to the gross farm income of 1929. Under the prevailing credit conditions, the farm debt threatened to ruin both debtors and creditors. The newly created credit facilities relieved both groups.

In the first 15 months under the Farm Credit Administration the Federal land banks made over 450,000 loans to farmers for more than \$1,150,000,000. About 90 percent of these loans refinanced existing indebtedness. By the summer of 1934 the Federal land banks and the land-bank commissioner were holding over \$2,100,000,000 in farm mortgages.

Claims Scaled Down

Creditors who were desirous of converting farm paper into cash have, in many instances, scaled down the amount of their claims in order to make it possible for heavily indebted farmers to refinance their loans through the Farm Credit Administration. Such scaledowns were necessary where the farmer's total debts exceeded 75 percent of the normal value of his property, since a land-bank commissioner's loan, together with prior liens, may not, under the law, exceed 75 percent of the normal value of the farm property offered as security for the loan. From June 1. 1933, through August 22, 1934, borrowers through the Farm Credit Administration obtained reductions in their indebtedness amounting to more than \$56,000,000. About 16 percent of the borrowers obtained scale-downs of their indebtedness in connection with the refinancing operation. Where such reductions occurred the amount scaled down constituted 26.3 percent of the prior indebtedness.

Furthermore, these borrowers benefited from interest reductions, because the rates charged by the Federal land banks and the landbank commissioners are usually lower than those previously paid by the borrowers. In interest alone the saving to farmers on farm-mortgage indebtedness refinanced through the Farm Credit Administration is estimated at over \$16,500,000 a year, or nearly one-fourth

of the interest formerly paid on the same indebtedness.

Under the Emergency Farm Mortgage Act all borrowers from the Federal land banks obtained a reduction in their interest charges. On Federal land-bank loans in force in May 1933 the interest rate ranged from 5 to 6½ percent, and averaged 5.4. During the 5-year period ending July 12, 1938, the rate of interest on loans made through national farm-loan associations prior to May 12, 1935, is reduced to 4½ percent. The interest rate on loans obtained directly

from the Federal land banks is temporarily reduced to 5 percent. In addition, the legislation authorized postponement of principal payments during the 5-year period ending July 12, 1938, and also provided that extensions of unpaid installments on loans might be granted to worthy borrowers during this period.

Local Credit Associations

During its first year the Farm Credit Administration also helped farmers build a system of 650 local production credit associations. These associations of farmer borrowers are now in operation and provide a permanent Nation-wide system of low-cost production and marketing credit. The associations make loans on crop and chattel security, and through them production money becomes available to farmers and stockmen at rates of interest which, for the country as a whole, are the lowest ever charged for this type of credit. The associations are now making loans to farmers and stockmen at 5 percent interest. Many private lending agencies charge 2 to 3 percent more. Thus Federal action under the new administration has furnished

three principal types of agricultural relief. (1) By devaluing the dollar it has caused the prices of certain farm commodities to rise more than the prices of the things that farmers buy, and increased their ability to meet debts and taxes. (2) Through production adjustments financed by processing taxes and through marketing agreements with production-control features, it has brought the supply of farm commodities more nearly into a profitable relationship with the demand. (3) Through credit relief it has lightened and refinanced farm debt. It would not be correct to ascribe the whole improvement in farm conditions during the last 2 years to Federal activities. Much must be credited to the country's natural recuperative power. Depressions tend to run their course and to generate corrective forces spontaneously. However, this is a slow and painful process. In important respects, moreover, the present depression differs essentially from preceding depressions. It is world-wide and marked by an unprecedented break-down in international trade in which there has been as yet no significant revival. American agriculture was developed largely for trade with the outside world. The farm recovery of the last 2 years owes little or nothing to recovery in the world market. It is the result mainly of domestic changes, in which the activities of the Federal Government have been the most important element.

MARKETING AGREEMENTS

Another approach to the problem of increasing the income of farmers is through the marketing agreements and licenses authorized by the Agricultural Adjustment Act. Experience with such agreements and licenses during the past year indicates that under proper circumstances they may benefit producers substantially

Marketing agreements have proved to be particularly useful in the control of surpluses and in the regulation of shipments. Surpluses can seldom be effectively controlled by marketing agreements and licenses without the participation of 100 percent of the industry. A number of attempts have been made to deal with a surplus problem through the cooperative organization of growers and handlers,

but it was seldom possible to obtain the support of the entire industry. In most instances from 15 to 20 percent of the producers refused to cooperate and were thus able to obtain substantial benefits

under the program without sharing the costs.

In the season of 1933, for example, California's supply of Valencia oranges was so large that all of the larger marketing agencies and a number of individual shippers entered into a voluntary proration agreement. These agencies ship more than 90 percent of the Valencia crop. Despite the large percentage of the industry which was cooperating, it was found that the small minority outside the agreement shipped quantities considerably in excess of their proper proportion. In other words, this small minority profited by the sacrifices of the large majority. The experience under this voluntary agreement led the industry to develop a marketing agreement under the A. A. A. This agreement has been in operation since December 1933. Plans for national proration under a national citrus agreement are now going forward.

Officially approved marketing agreements have placed many programs on such a basis that all the groups concerned, cooperative and proprietary alike, must participate. Embodied in the terms of a blanket license, the essential features of the marketing agreement bind all the handlers or processors engaged in the industry. By this means the former noncooperators are kept from reaping more than their share of the benefits. Marketing agreements and licenses have thus made it possible for the growers of citrus fruits, walnuts, raisins, and other commodities to avoid the disastrous effects of

unregulated supplies.

Supply Control Features

Marketing agreements usually involve more than the simple term "agreement" may imply. Producers, processors, and handlers of farm products sometimes believe that simple agreements as to prices will increase the income of producers. Simple price agreements may work occasionally, but usually only for one producing season. Generally, marketing agreements require provisions for affecting supplies, either by regulating the movement to market or by eliminating part of the supply from commercial channels. In a measure the supply-control features of the marketing agreements correspond to the production-control features of the adjustment programs developed for the major crops. However, the agreements usually provide only for the control of supplies already produced and not for the control of new production.

Marketing agreements have dealt effectively with perishable commodities produced at great distances from consumer centers. In such cases transportation and handling costs absorb much of the terminal market price. In years of excessive supplies the wholesale price at consuming centers tends to fall below the handling and shipping costs. It is then possible for the producers and handlers, acting in cooperation, to control the movement of these products so as to avoid the demoralization of the markets. They can retain excessive supplies in the area of production and save handling and transportation costs, which would largely represent loss.

Many different methods of regulating market supplies have been developed in connection with marketing agreements. Agreements relating to fresh fruits and vegetables usually provide for a simple proration of shipments, sometimes coupled with a stricter control over the marketing of low-grade products. Methods must suit the particular industry. Frequently a careful regulation of shipments, so as to avoid alternate gluts and shortages, improves the net income of producers, without reducing total supplies to consumers. Farmers dislike to destroy or to refrain from marketing products which they have grown. Hence there is little danger that proration will restrict marketings excessively.

Supply-control features of some agreements divert a portion of the supply from the regular trade channels into byproducts. Such arrangements are now in effect for the walnut and raisin industries. The purchase of excess supplies for relief purposes, and their removal

from commercial channels, have like effects.

Some agreements and licenses control prices paid to producers. To be effective in most cases such action must be coupled with some control over supplies marketed or over marketing and distributing practices. Wherever possible, the administration has avoided direct price fixing in connection with marketing agreements and licenses. Many of the early agreements, including those relating to peaches, olives, and milk, provided for fixed prices to producers and fixed resale prices. This involved the fixing of processing or distribution margins. Price fixing of this character necessitates either a satisfactory compromise as to the size of the margin or regulation of the spread in price between producer and consumer. Such regulation would require administrative machinery and procedure similar to that which the Interstate Commerce Commission has been developing for a generation. As a matter of fact, it is doubtful whether processing and distributing margins can be dealt with satisfactorily through marketing agreements. In most cases the A. A. A. will sponsor the direct control only of prices paid to producers, and not then unless price control goes along with some measure of supply control or regulation of market prices.

The Milk Licenses

In the case of milk licenses, which provide for minimum prices to producers, the classification of milk according to its use, the equalization of sales opportunities and of surplus burdens among producers, and other protective measures are all interwoven with prices. and with the problem of increasing the income of milk producers. In most cases the minimum-price provisions of the licenses have been of direct value to producers by affording reasonable price stability and by protecting producers against the past practice whereby farmers bore the brunt of dealers price wars. Under the licenses, prices may be so determined as to make for a reasonably compact milk shed without having any of the objectionable features of fixed territorial boundaries or certificates of necessity. For example, by requiring through a license that all distributors pay the same price for milk used for similar purposes, it is possible to remove the chief ancentive which the distributor has to go out and develop new sources of supply when such supplies are not needed in the market. Furthermore, by requiring that all distributors participate in a pooling plan for a particular market it becomes impossible for a group of producers either to undersell the market or to obtain higher average prices than are received by other producers similarly situated.

Experience in connection with milk licenses also indicates that the provisions of these licenses affecting practices in the distribution of milk have been quite important as a means of improving the income of producers. For example, each license provides for checktesting and check-weighing services, which are designed to protect producers against unscrupulous practices. In some cases the reduction or elimination of transportation or other handling charges have been directly reflected in higher net prices to producers without any change in wholesale prices. It has also been possible to give producers more protection against credit losses through nonpayment by financially irresponsible dealers.

One Danger in Marketing Agreements

Some of the marketing agreements operate to raise prices by reducing the supply available for consumption. In these agreements there is frequently the danger, therefore, that those involved will make the same mistake that some urban industries have made—that they will curtail supplies excessively for the purpose of maintaining prices at too high a level. The nature of the farming business and the psychology of the farmers themselves are a partial safeguard against too great a restriction in volume. Furthermore, in the agreements which it has approved the Agricultural Adjustment Administration has taken great pains to avoid this unfortunate outcome. Nevertheless, it is to be expected that from time to time pressure will come from some agricultural groups operating under marketing agreements similar to that which is frequently exercised by certain groups interested in factory production.

PROTECTION OF CONSUMERS

It is expressly stipulated in the Agricultural Adjustment Act that the interests of consumers shall be protected. Farm production shall be adjusted, the act declares, "at such a level as will not increase the percentage of the consumers' retail expenditures for agricultural commodities, or products derived therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the pre-war period August 1909 to July 1914." In other words, for the protection of consumers, the measure sets a limit to the level to which farm commodity prices may be raised by crop adjustments or marketing agreements.

While, as consumers, people naturally desire that prices of things they buy shall be low, it is important to recognize that the permanent public welfare, including the welfare of consumers, suffers when prices are forced down to levels not consistent with efficiency in production and distribution. During the depression, farm commodities were available to consumers at very low prices. This resulted mainly from a fall of farmers' returns far below the profit line. It did not mean a permanent lowering of consumer costs, and there was involved in it no reduction in the margins of processors,

distributors, or handlers. The reduction in consumer prices came almost entirely out of the farmers' returns. It was clear that, unless farm prices were brought back into balance with prices of goods bought by farmers, many farmers ultimately would be driven out of production, at which time consumers would have to pay unduly because of the resulting shortage of food. Consumers were suffering in another and more immediate way. The impairment of farm buying power caused unemployment in the cities and helped to bring about a general disorganization of the economic system. Thus the producer and consumer have both been victims of wide swings from surplus to scarcity, and of the extreme cycles of low and high prices.

The efforts of the Agricultural Adjustment Administration to raise the income of farmers in many cases involve higher prices to consumers. But so long as these increases are not diverted into nonfarm channels and so long as the share of the consumers' dollar received by farmers is not greater than that received by them in the pre-war period, this does not conflict in any way with legitimate protection of the consumers' interests. On the other hand, the increased income received by farmers actually helps consumers because it means increased buying of city-made goods by farmers, increased employment, and increased business activity all around.

Consumers, in other words, derive their fair share of the general advantage that results from a healthy economic condition in agriculture which is based upon fair prices to farmers. Reasonable remuneration of agriculture for providing the Nation with its food and fibers is not a burden upon consumers so much as it is an assurance

to them that efficient production at fair cost will continue,

Interdependence of Farmer and Consumer

But just as there can be no more than a false or transitory advantage to consumers in ruinously low farm prices, there also is no enduring gain for agriculture in discriminations against the consumers. Farmers generally show a growing understanding that agriculture relies, for sustained progress, upon rising consumer buying power. This interdependence of farmer and consumer is a vital factor to be considered in planning all steps for economic recovery.

The Consumers' Counsel of the Agricultural Adjustment Administration has undertaken to provide protection for consumers under the provisions written into the Adjustment Act. Its work is a specific recognition of the mutual interests of farmers and consumers. Scrutiny of pending adjustment programs, marketing agreements, and codes from the point of view of consumer welfare, and examination of their economic effects on consumers, after they are in operation, are special functions of the Consumers' Counsel. The Consumers' Counsel represents the consumer interest in public hearings on agreements and codes, and advises the administration in the drafting of their provisions as they affect the consumer. It is important that provisions in marketing agreements and codes shall not be employed either openly or covertly to convey governmental sanction of excessive margins of processors and distributors, to widen spreads which already may be unjustifiable on economic grounds, or to disregard in any way the consumer or public interest in trade arrangements between organized producers and processors.

The Consumers' Counsel has proved increasingly useful in its functions. It has protected consumers by giving publicity in instances where efforts were made to pyramid processing taxes and so to make these taxes an excuse for profiteering under cover of adjustment programs undertaken by the Administration in the interests of farmers. As a matter of routine, the Consumers' Counsel tabulates and makes public information on the current consumers' prices of farm goods, and the relationship between those prices and the farm prices for the same commodities. In general, though the Consumers' Counsel is new and experimental, it may be said in all its work to emphasize usefully a very important principle—that recovery is not simply an affair of monetary gains, but that such gains must be translated into real income for the community as a whole.

PROCESSING TAXES

Few, if any, taxes have been popular. But most of us realize that if we abolished taxes we should at the same time abolish police protection, public schools, public roads, and many other necessary things. If we abolish the processing taxes, with nothing to take their place, we shall have to abandon our efforts to balance farm production with the market demand under the Agricultural Adjustment Act.

What actually happened to farm prices, to city retail prices and to processors' and dealers' margins after the processing taxes went into effect? Preliminary studies made in the Department of Agriculture were reported in Agricultural Adjustment: A Report of Administration of the Agricultural Adjustment Act, May 1933 to February 1934. Preliminary studies made by other research organizations have appeared in technical publications such as the Journal of Farm Economics. Such studies, though as yet incomplete, agree in their general conclusions.

They indicate-

- (1) That the margins of processors and dealers (the spread between the prices they pay to the farmer and the prices they charge to the consumer) have been generally widened just about enough to cover the payment of the processing taxes and other increased costs, such as higher wage levels. There is little evidence of pyramiding except in a few industries and over short periods. Thus, the only possible loss sustained by processors and middlemen on account of the crop-adjustment programs is from a reduction in the amount of their business.
- (2) That, considering the combined effects of reduced production, the collection of the processing taxes, and the payment of benefits to farmers, the net result has been to increase prices paid by consumers and to increase the incomes (including market prices and benefit payments) received by farmers cooperating in the adjustment programs.

Effects Upon the Consumer

City retail prices of food from the low point in March 1933 to June 1984 rose 20 percent. Not all of this rise resulted from the processing tax-production adjustment program. Part of it was due to short crops of wheat and potatoes, part to the devaluation of the dollar and the resulting rise in the prices of export commodities, and

part to an improvement in consumer buying power. During this same period pay rolls in manufacturing industries went up much more than did food prices. Similar comparisons based on other months give the same general conclusions—that incomes of wage earners in the cities have increased more than have the prices of foods.

The wheat tax of 30 cents a bushel represents about three-fourths of a cent a pound of flour which sells in city stores for about 5 cents, or about one-half cent on a pound loaf of bread costing the consumer an average of 8.9 cents on August 14, 1934. The cotton tax of 4.2 cents a pound represents about 8 cents on a pair of overalls costing \$1.60; less than 8 cents on a sheet costing \$1.30; about 3½ cents on work shirts costing 90 cents; or about 1.1 cents on a yard of unbleached muslin selling for 14 cents. The hog tax of \$2.25 represents about 4½ cents on a pound of retail pork cuts. The Bureau of Labor Statistics reported that on August 14, 1934, sliced ham cost consumers an average of 39.6 cents; picnics, 15.6 cents; loin roast, 20.6 cents; sliced bacon, 29.8 cents; and lard, 11.3 cents. It will be seen that in all cases the processing tax accounts for only a small part of the prices paid by consumers for farm products.

Two provisions in the Agricultural Adjustment Act protect the consumer against excessive increases in food prices. The use of processing taxes, production adjustments, and benefit payments is limited (1) to restoring the purchasing power of farm products to the pre-war relationship, and (2) to restoring to the farmer the pre-war percentage of the consumers' dollar. These provisions are a definite safeguard against any unfair or exorbitant increases in the prices of food or other agricultural goods as a result either of processing taxes or of production adjustments. Moreover, the city worker will benefit indirectly but surely from an improvement in the

farmers' buying power.

High Cost of Doing Nothing

Farm readjustments could be made without benefit payments, and therefore without the use of processing taxes, if we were willing to pay the price. From past experience, however, we may be sure that, unless the farmers were helped or forced to make such adjustments, they would be made too slowly. Meantime, hundreds of thousands of farm families would be pauperized, and the depression in both town and country would be indefinitely prolonged. One possible method of bringing back a desirable balance between production and consumption would be a policy of not interfering with the working out of economic laws. If the prices of wheat, cotton, hogs, and other agricultural commodities fell low enough and stayed low long enough, many farmers would be forced to give up their farms. This would reduce production. Thus a balance between production and consumption would gradually be brought about without any assistance from the Government. But thousands of farm families would be left destitute if the Government adopted the policy of not interfering.

Instead of leaving necessary adjustments to the individual farmer, the Government might compel him to make them, or might penalize a refusal to make them. It might license all farmers and regulate their acreages and the number of their farm animals. This would be a direct attack on the problem, which might bring about necessary readjustments in a short time. It is doubtful, however, whether farmers would accept such compulsory regulation, except as a last resort. Compulsory regulation should not be attempted if readjustments can be accomplished through voluntary cooperation. In no case should it be attempted unless practically all farmers want it.

The farmer who is not willing to cooperate in production adjust-

The farmer who is not willing to cooperate in production adjustments might be penalized by taxes or by other means. This would not amount to compulsory regulation. No farmer would be compelled to adjust his production. But the penalty for declining might be so severe that he would prefer to make the necessary adjustments.

The principal method followed up to the present is that of voluntary cooperation, with the payment of benefits to the cooperator. It is supplemented this year, in the cases of cotton and tobacco, by penalties on the noncooperator. Processing taxes are the only source of revenue from which the benefit payments are made. If processing taxes should be abolished, no substitute being provided, there could be no benefit payments. The whole adjustment program would be at an end. Critics of the processing taxes have not suggested any other means of financing the adjustment of production. Some alternative must be found before we can consider dropping the processing taxes.

Some Advantages of Processing Taxes

The processing taxes have advantages over other kinds of taxes. They are easy and inexpensive to collect and difficult to evade. The revenue obtainable can be forecast with a high degree of accuracy. It is doubtful if any other form of tax would offer as sure and steady a source of revenue. Furthermore, the processing taxes apply only to the domestically consumed portion of the products taxed. They do not penalize the exporter. The farmer is not taxed on his production of foods processed for his own use. Also, the rates of the processing taxes can be easily and quickly adjusted to meet changing market conditions. Such flexibility would be difficult to achieve with other methods of getting revenue.

In the case of hogs, the processing tax tends to penalize the non-cooperator. Unless supplies are reduced it falls, to some extent, at any rate, on the producer. The cooperating farmer receives compensation in benefit payments. The noncooperator, of course, does not. And in addition, he has to wait until the market supplies are reduced by the adjustments of cooperaing farmers before getting

any relief in the shape of higher prices.

Some Disadvantages

There are also some disadvantages in the processing taxes. Some economists maintain it is wrong to tax raw materials and contend that the tax should be imposed only on finished goods. They believe a tax on raw materials is pyramided, so that prices to the consumer are raised by much more than the amount of the tax. But, as was said earlier, there is very little evidence of any general pyramiding of the processing taxes.

The processing taxes may tend to lower the prices of some farm products below the levels which might exist if the adjustment program were financed by some other means. But this may induce more farmers to cooperate in production adjustments. Benefit payments and adjustments of production furnish adequate compensation.

Perhaps the most common objection to the processing taxes is that they increase retail prices. Studies indicate that practically all the wheat processing tax and most of the cotton processing tax pass to the consumer in the form of higher retail prices. Heavy Federal purchases of hogs were necessary when the hog processing tax first went into effect to sustain the market price of hogs so that the tax would not fall mostly on the producer. With reduced supplies resulting from the adjustment program, the tax is now being shifted to the consumer without the support of Federal buying in the market.

Wherever the adjustment program is successful, it will mean either higher retail prices or a decided reduction in the charges of dealers and processors. These intervening charges are very high, and means to reduce them should be sought. But the problem is difficult and complicated. So far no one has proposed a workable plan for a general reduction of the costs of transportation, processing, and marketing. Meantime the only way of increasing farm prices is through the increase of city retail prices. Fortunately a moderate increase in retail prices generally means a substantial increase in the prices received by farmers. Prices high enough to make farming pay are necessary. Such prices should not involve any injustice to the consumer.

The Most Serious Objections

The most serious objection to the processing tax, and one which merits careful consideration, is that the greatest burden falls on the poorer people. This is an important and legitimate criticism of the processing taxes. It should be remembered, however, that in proportion as the farm adjustment succeeds it will stimulate urban employment. This will furnish an important offset to any rise that may take place in the cost of living.

It might be possible to obtain the revenue necessary for benefit payments either by increasing the rates of existing Federal taxes or by providing for some new form of tax. Two possible sources of revenue would be: (1) an increase in the rates of income taxes and (2) a sales tax applied either to all commodities or to a group of commodities which might be classified as luxuries. If provision were made for financing benefit payments either from increased income taxes or from a general sales tax, the program would not be so great a burden on poorer people as is the processing tax.

Another source of revenue would be a tax on the profits of processors and distributors of farm products, or possibly a general tax on the profits of industrial concerns. It would be difficult for middlemen to avoid a substantial part of the burden of such a tax and it probably would have a tendency to reduce middlemen's charges and to bring about a narrower spread between the farm prices and the city prices of some commodities. Theoretically there is merit in such a tax. Practically, it would be difficult to work out satisfactorily. The income which might be obtained would be uncertain and would vary greatly from year to year.

Alternatives Should Be Considered

However, there should be careful consideration of possible alternatives to the processing taxes. There may be other possible methods in addition to those above outlined. The ideal requirement is a method which will provide adequate and sure revenue, which will be easy and inexpensive to administer, and which will not unduly burden consumers of low income.

FARM REAL ESTATE TAXES

Measurable relief from taxes came to agriculture in 1933, and 1934 promises additional relief. Farm real estate taxes reached a peak in the United States in 1929. In that year the average tax per acre for the country as a whole was 58 cents. This may be compared with an average of 24 cents in 1913. After 1929 the average farm realty tax per acre began to decline. In 1932 it stood at 46 cents, or 21 percent below 1929. Between 1932 and 1933 there was an additional reduction of about 6 cents an acre, judging from data already assembled from 23 States. Probably the average tax per acre for 1933 was about 39 cents, or 33 percent less than it was in 1929.

Naturally the tax reduction varied by States and regions. In California, for example, average farm real estate taxes per acre decreased from 94 cents in 1932 to 65 cents in 1933. On the other hand, in Mississippi the tax increased from 52 cents to 55 cents. Generally, the greatest reductions took place in the far Western and Middle Western States. Part of it resulted from a curtailment of social services and from salary cuts. In some States public borrowing permitted tax reductions. Farmers in many States obtained partial relief from the general-property tax through State laws providing

revenue from other sources.

Nine States in 1933 allocated the proceeds of sales taxes to the support of public schools. Two States diverted to the schools the proceeds from increases in taxes on gasoline and lubricating oils. Three States provided that all or part of the revenue from newly levied income taxes should be devoted to the public schools. Federal funds to supplement teachers' salaries became available in 1934. Possibly farm taxes would have been reduced without this State and Federal assistance to the schools, but the rural school system would have suffered. Because the aid was forthcoming, the proportion of the total cost of government borne by the general-property tax was reduced.

Besides benefitting from a reduction in the amount of their taxes, farmers benefited from a decrease in the burdensomeness of the charges. They had more income with which to pay. Individual taxpayers find taxes bearable or not as their income varies. Hence the better measure of farm-tax burdens is not the amount levied per acre but the proportion that the taxes constitute of the gross farm income. Between 1932 and 1933 the gross farm income per acre increased more than 20 percent, while at the same time the real-estate tax per acre decreased between 10 and 15 percent. Hence the tax per \$100 of gross income in 1933 was only about two-thirds what it was in 1932 and about the same as in 1930.

Farm Aid Through Taxation

Farm taxation, however, is only a part of the broader field of public finance. In the last year and a half farmers have seen this fact emphasized in ways to their advantage. They have had good reasons in the past to complain about the distribution of tax burdens. Excessive dependence on the general-property tax by State and local governments has frequently hurt them. Under new Federal legislation, notably the Agricultural Adjustment Act, taxation furnishes direct benefits to agriculture. Revenue for the rental and benefit payments which last year increased the gross farm income by one-fifth came from processing taxes. Benefit resulted to agriculture also from another change in public finance, namely, monetary devaluation, which raised prices and redistributed wealth to the farmers' advantage.

Federal expenditures, dependent as the last resort on taxation, benefited agriculture by relieving unemployment. Food and work furnished to the unemployed increased consumption and helped to raise farm prices. Federal funds for these purposes did not involve any increase in direct taxation of agriculture, since they did not come from taxes on general property. Federal, State, and local policies reduced farm-tax burdens during 1933 and 1934 in three distinct ways. They reduced tax charges absolutely, raised farm prices, and thereby enhanced the farmer's power to pay the remaining taxes, and tapped new sources of revenues for direct and indirect agricultural

relief.

COTTON

When the Agricultural Adjustment Administration initiated the cotton-adjustment program in 1933 cotton was selling at about 6 cents a pound on the farm. The world supply of American cotton was about 26,000,000 bales, and had been near that record level for 2 years. Furthermore, cotton acreage had increased tremendously. Many farmers had no other cash crops to which they could turn. and low returns from cotton impelled them to increase their production in order to meet, as nearly as possible, their cash expenses incident to production and living. Labor drifting from the cities to the cotton States also strengthened the impulse to grow more cotton. As the season advanced, it became evident that the large acreage and good growing conditions would result in a big crop. Had cotton reached maturity on the entire acreage planted the output would have exceeded 17,000,000 bales. The world's supply of American cotton would have been more than 29,000,000 bales. The cottonadjustment program for 1933, therefore, aimed to withdraw 10,000,-000 acres from production, or the equivalent of 3,000,000 bales. considerably greater adjustment was desirable and would have been attempted had circumstances permitted. Actually the program resulted in a withdrawal from cotton production of 10,500,000 acres, on which area average 1933 yields would have given 4,500,000 bales.

For withdrawing this land from production, 1,032,000 producers received from the Government approximately \$112,600,000. They also received options on a quantity of Government-owned cotton, on which they made a profit of more than \$50,000,000. The 1933 cotton crop was limited to 13,047,000 bales, and the world's supply

was reduced from 26,000,000 to 24,600,000 bales. This adjustment, with an improvement in the demand for cotton and with the reduction in the gold content of the dollar, raised the average farm price of cotton for the 1933-34 season to 9.7 cents per pound, as compared with an average of 6.5 cents per pound received for the 1932-33 crop. The farm value of the 1933-34 crop was \$717,007,000, as against \$483,912,000 in 1932-33. Including benefit payments and profits on options, the gross farm value of the 1933-34 crop was nearly \$880,097,000.

After a series of meetings with farmers and others interested in the price and production of cotton, the Agricultural Adjustment Administration formulated a program for 1934 which called for an acreage reduction of approximately 40 percent of the average acreage planted to cotton during the period 1928–32. The campaign was launched in January 1934, and approximately 1,000,000 producers contracted to keep roughly 15,000,000 acres out of cotton production. The reductions constituted about 38 percent of the base acreage of the cooperating producers.

Payments to Producers

Payments to producers, as compensation for this reduction, were of two types. There was a rental payment amounting to $3\frac{1}{2}$ cents per pound on the average per acre yield of the land taken out of production, and a parity payment, guaranteed to be not less than 1 cent a pound on the domestically consumed proportion of the base production. The domestic consumption of cotton during the base period, 1928–32, averaged 40 percent of the production. The contracts stipulated that managing share tenants should receive half of the rental payment, and that all tenants, including croppers, should share in the parity payments to the same extent that they shared in the crop. The total rental payments will be about \$90,000,000 and the parity payments around \$27,000,000, giving a total compensation from the Government to the farmers for the 1934 cotton acreage reduction of something like \$117,000,000.

During the course of the 1934–35 sign-up campaign legislation was introduced in the Congress for the purpose of making compulsory the cooperation of all cotton producers in production-adjustment programs. This legislation seemed to meet with widespread support among cotton farmers, particularly contract signers. The Secretary of Agriculture, in order to ascertain the true sentiment of cotton producers, sent out more than 40,000 questionnaires in January 1934 to representative cotton producers requesting their opinion regarding legislation then pending in Congress designed to limit within an estimated market demand the quantity of cotton that could be ginned

and sold in any one year.

The results of the questionnaire survey indicated that an overwhelming majority of cotton producers favored compulsory control of production. Congress passed the Cotton Act, commonly known as the Bankhead Act, on April 21, 1934. It represents a plan that met with the approval of the majority of cotton producers heard from in the questionnaire survey. The measure is effective for 1 crop year, from June 1, 1934, to May 31, 1935, and for a second crop year should the President find that a continuation of the emergency

requires it and that the Secretary of Agriculture finds that two-

thirds of the cotton producers favor it.

Specifically, the Bankhead Act provides that 10,000,000 bales (500 pounds net weight) may be ginned free of the ginning tax in the crop year 1934-35. This amount of tax-exempt cotton is allotted to individual farms on the basis of the production history of each farm. The act also exempts cotton of 1½-inch staple length and cotton produced on publicly owned agricultural experiment stations. Other cotton above the 10,000,000-bale exemption is subject to a tax of 50 percent of the average central market price of %-inch Middling spot cotton. In any case, the tax is to be not less than 5 cents per pound.

As a result of the voluntary adjustment and of action under the compulsory features of the Bankhead Act, approximately only 28,000,000 acres were planted to cotton in 1934. Low yields on this reduced acreage produced a crop estimated in October at 9,443,000 bales. The world supply of American cotton for the 1934–35 cotton marketing year will be below 20,000,000 bales, as contrasted with 26,000,000 bales when the adjustment programs started. The changed supply position caused a sharp advance in cotton prices. In August 1934 the farm price averaged 13.1 cents a pound.

A Long-Time Cotton Program

In a program designed to increase the returns of American cotton growers, not merely for a single season but for a long period, it is necessary to determine the point to which cotton prices may be raised without unduly stimulating foreign competition. Cotton production in this country has been developed to meet the demands of the world market. Ordinarily we sell more than half our crop abroad. Loss of this foreign market would force cotton growers to cut their acreage to less than half its normal size. In formulating the adjustment program for 1933 and for 1934 the administration did not ignore the possible effect on foreign competition. With an immense carry-over in existence, however, the danger of causing important foreign expansion was not imminent. Acreage reduction in the United States was appropriate for 1933 and for 1934. But it is obvious that a policy based on the existence of a large surplus may need to be changed as the surplus disappears. In what manner and to what extent our cotton production should be adjusted to the supply situation as it now stands should be carefully considered.

More than 50 foreign countries grow cotton, and their producers react to price changes just as ours do. In the period 1921-25, when bollweevil damage in this country threw doubt on our ability to continue supplying the world demand, foreign cotton acreage, excluding that of Russia, rose from 28,200,000 acres to about 40,800,000 acres or 45 percent. A part of that increase would have occurred, even with normal crops in the United States, since the depression and low prices of 1920 and 1921 resulted in an acreage in foreign countries in 1921 somewhat smaller than in the years immediately preceding. Following the price slump of 1929 foreign acreage declined, but it was increased by more than 4,000,000 acres in the 1933-34 season, when it was the largest on record. However, the estimated 1933-34 foreign acreage excluding Russia, whose marked expansion in cotton acreage under the Soviet Government has been

independent of the movement of prices in the markets of the world, was somewhat less than the previous peak. Early reports indicate that there was probably a further increase in foreign acreage from which the 1934–35 crop is being harvested. There are possibilities for substantial cotton-acreage expansion in India, Africa, Russia, China, and South America, and the extent of the expansion which occurs will depend to a considerable extent upon prices.

Foreign Competition Should Not Be Overemphasized

American growers should bear these facts in mind, without overestimating their significance. They do not warrant a return to unregulated production in order to hold this country's position in the world market. Foreign cotton production, in many countries, meets with great difficulties of climate, soil, labor, and transportation. Cotton production cannot be expanded very rapidly in these countries. It is easier for the United States than for the competing countries to adjust the output of cotton to a rising demand. No single large area anywhere else in the world is so well adapted to cotton production as the southern part of the United States. Our natural advantages in the production of this crop do not vanish when we eliminate the irregularities of supplies and adopt a program of production control. Production control is not a matter of rushing from one extreme to the other—but simply of continuing to adjust the production to the demand, foreign and domestic.

Specifically, the problem is to ascertain, as nearly as possible, the quantity of cotton that will give the best net return—not for 1 year or for 2, but for a long time. By curtailing production very greatly, we could temporarily raise the price of cotton to a high level. Simultaneously, however, this would encourage foreign competition. Opinions vary as to the price that would strongly stimulate foreign expansion. Much depends upon the value of the dollar relative to gold and to the currencies of other countries, and upon the price of cotton as compared with the prices of alternative products and with

costs of production.

Up to the present the American cotton policy stands justified by its results. Foreign countries produced more cotton last year than they did the year before, but a large part of the increase would have occurred regardless of the cotton program in the United States, as most of the 1933–34 foreign crop had already been planted before our program was even decided upon. The prosperity of the American growers has been enormously enhanced by the adjustment programs conducted during the last 2 years, because these programs have helped to correct an unbalanced supply position. It does not follow that still more prosperity could be gained by creating an artificial shortage.

We wish to retain our foreign market; and this means that we must continue to supply it at moderate prices. But we do not wish to keep prices ruinously low on the assumption that any improvement through the elimination of the surplus will cause a loss of our foreign markets. We must not, therefore, permit an increase in foreign production to stampede us back into overplanting. Our cotton policy has succeeded thus far because it operated to make an adjustment to the demand. That is the formula for its success in

the future. It will be more difficult to apply, now that the problem is to steer between extremes. The principle, however, remains unchanged.

WHEAT

In the wheat adjustment, two elements are equally important—the cooperation of American farmers and the foreign response. This country produces wheat partly for the world market. Normally. therefore, the world market determines the price both for the wheat exported and for the wheat consumed at home. In exceptional circumstances, such as those that have prevailed during recent years, the American price may rise above the world price. But this is a wholly abnormal relationship, which could not endure if a normal crop were sold in the usual way. Ordinarily we have a substantial surplus for export, and as long as that condition continues it is necessary to combine the adjustment of production at home with an effort to obtain supporting action abroad. The United States could not assume the entire burden of bringing world wheat production into line with the world demand. Without exports, we would have to reduce wheat acreage to about 75 percent of our previous average acreage, and that is a greater permanent reduction than it seems desirable to make. Furthermore, this action would not suffice for the world readjustment unless other countries took themselves in hand.

Accordingly, the Agricultural Adjustment Administration coupled its program for adjusting the American wheat acreage with an attempt to enlist the cooperation of other countries, both exporters and importers of wheat, in a world adjustment. Such an adjustment is possible. Taking the world as a whole, yields of wheat are. remarkably stable from year to year, despite annual variations in the vields of different countries. In other words, in the long run man is a very important factor in determining the production. acreage as well as the weather is a governing factor. In recent years the world's wheat acreage has increased in spite of a declining world demand. Exporting countries and importing countries alike have an interest in promoting a more rational adjustment. This common interest found expression in the international wheat agreement of 1933, in the negotiation of which the United States took the initiative. Under the terms of this agreement, exporting countries accepted export quotas for the 1933-34 crop season and undertook to restrict their production in 1934, while importing countries promised not to encourage further wheat expansion within their own borders and to diminish their import restrictions as wheat prices advanced. The arrangement, a logical counterpart of our acreage adjustment, encouraged the hope of effective world cooperation.

Influence of Weather Conditions

Unfortunately weather conditions in both hemispheres upset all culations last year, and to a still greater extent this year. Seanal conditions do not affect the logic of acreage adjustment for the long pull, but they may seriously interfere with immediate action. Prought in the United States reduced the 1933 wheat crop to less

than 528,000,000 bushels, as compared with 932,221,000 bushels in 1931. On the other hand certain other countries, notably Argentina, had unexpectedly large crops, while France, Germany, and Italy, had phenomenally large crops for the second year in succession. This change in the situation prevented universal adherence to the export quotas fixed in the international agreement. Argentina would have had to denature a large part of its crop in order to comply with the pact, which required a reduction of shipments without any increase in the carry-over. Argentina declared itself unable to do this, and requested a readjustment of the quota. It proved impossible to reach an agreement before Argentina had to begin seeding wheat for the 1934 crop. In consequence Argentina has not made the promised

adjustment in production for 1934.

But the agreement was successful in that wheat acreage in 1934 dropped not only in the United States but in Canada and Australia. and even to a slight extent in Argentina. Certain wheat-importing countries, including Italy, France, and Germany, reduced their acreage likewise. France and Italy conducted reduction campaigns, and France passed acreage-restriction laws. The influence of all these reductions combined, however, was negligible in reducing production, as compared with the influence of unfavorable weather in many countries. In 40 countries of the Northern Hemisphere, the estimated wheat production for 1934 is only 2,878,768,000 bushels, as compared with 3,149,007,000 bushels in the same countries last year. In the United States the crop was below 500,000,000 bushels, the smallest in 40 years. It fell over 100,000,000 bushels below domestic requirements, and foreshadowed a reduction of our domestic carryover to normal by the end of the 1934-35 marketing season. This tremendous change in the supply position naturally lessens the immediate need for acreage adjustments, and makes world cooperation toward that end more difficult to achieve.

Elimination of the wheat surplus in the United States by 1935 is a possibility. Acreage adjustments and the weather have done in 2 years the larger part of a job that seemed likely to take 5 or 6. In consequence, wheat prices have risen. The average farm price in the United States in September 1934, was 92.2 cents a bushel, as compared with 32.9 cents in January 1933. But rising prices do not benefit farmers with little or nothing to sell. There is more calamity than benefit in the adjustment of supplies through drought. Yet acreage tends to rise if prices do, and acreage adjustment will be more difficult than it was before the surplus disappeared. Continued restriction of the American wheat acreage will be justified if competing countries likewise recognize the need for acreage adjustments,

but not otherwise.

Limitations of Reduction Policy

Only by putting our wheat industry completely on a domestic basis could farmers get permanent price gains through acreage restrictions alone. Putting it on a domestic basis would be very difficult; for temporary price gains would tempt farmers back into large production for export. Lacking world cooperation, the United States will have to reconsider its whole wheat program, and possibly to contemplate renewed production for export at highly competitive

world prices. Within the United States returns to wheat farmers could be maintained above the world level, through making adjustment payments under the Agricultural Adjustment Act. Now that the wheat surplus of the depression period has disappeared, we must adjust the production with an eye to the whole situation, both foreign and domestic, and should not commit ourselves to a program of

indefinite restriction, regardless of conditions abroad.

Within the United States the wheat-adjustment campaign has definitely increased the income of wheat farmers. Through processing taxes, the plan has paid its way. Growers have done their part, and the administration has distributed among them adjustment payments totaling more than \$98,600,000. This sum was due on the 1933 crop, in accordance with the terms of acreage-reduction contracts. was paid in two installments. In 1933 a sign-up campaign brought the growers of nearly 80 percent of the Nation's wheat into cooperative production adjustment. They undertook in 1934 to reduce their acreage by 15 percent from the 1930-32 acreage, and by 10 percent in 1935. The contracts covered 585,000 farms, aggregating over 52,000,000 acres, or 80 percent of the average wheat acreage in the vears 1930, 1931, and 1932. Participating farmers withdrew more than 8,000,000 acres. Other farmers, however, increased their wheat seedings, so that the net reduction in seedings was approximately 7,000,000 acres.

Under ordinary conditions this reduction in acreage would have reduced the season's crop by at least 85,000,000 bushels. Drought of extraordinary extent and severity overshadowed the acreage reduction, and caused a far greater reduction in actual outturn. the adjustment program the return from wheat to cooperating farmers is the market price plus the adjustment payment. For the 1933 crop the farmers received average prices which, with the adjustment payments, brought returns for the domestically consumed portion very close to parity. The short crop of 1933, from which only 368,000,000 bushels were marketed, brought a cash income of \$267,-000,000 exclusive of the adjustment payments. The much larger crop of 1932, from which about 524,000,000 bushels were marketed, brought a cash income of about \$195,000,000. This is an excellent illustration of the fact that moderate crops tend to bring in more money than do very large crops. It emphasizes the necessity of continued adjustment. From the still smaller 1934 crop, the growers will get about as much or more than they got from the 1933 crop. The adjustment payments will be unaffected. These payments constitute partial crop insurance. The adjustment checks are the only income some growers will receive in 1934.

Adjustment Payments For 1934-35

For the 1934-35 crop year the administration will make adjustment payments on the same basis as it did this year. These payments will total not less than 29 cents per allotted bushel. The acreage reduction required will be 10 percent of the base acreage, and the wheat-processing tax will remain at 30 cents a bushel. Probably the adjustment machinery will work better. Farmers have the necessary organization. They understand the program, and have acquired administrative experience. In 1934 they organized 1,400 local pro-

duction control associations to administer the adjustment plan in 1,757 counties. Cooperating with Federal and State officials, they put through 585,000 contracts so efficiently that only 1,413 remained unsettled on September 15, 1934. Most of these unsettled cases reflect unforeseen circumstances or legal complications. There have been very few willful violations of the contracts. There should be even fewer administrative difficulties in the future.

Nothing that has happened this year detracts from the value of the wheat adjustment. True, drought has reduced the output far more than the acreage cut alone would have done, and has emphasized the need for reserves against crop failure. It has not changed the logic of adjusting production to the probable demand. Adjustment as such remains a desirable condition, though it may come about in undesirable and painful ways. Had wheat acreage not been curtailed by the acreage reduction, the 1934 crop would have been somewhat larger; but the growers would have been worse off. As things were, many farmers received more income from each acre withdrawn than from each acre seeded. In the sections hardest hit, production would have been practically no greater had all the land been seeded to wheat, and forage production would have been less. The adjustment program furnished important crop insurance to producers while from the standpoint of the consumer it left the situation not greatly changed. There is enough wheat in the country for domestic consumption, but the surplus has been eliminated.

CORN AND HOGS

For several years prior to the passage of the Agricultural Adjustment Act corn and hog producers in the United States far oversupplied the demand for their goods. They had in corn about 15 million acres above reasonable requirements. They were sending to market annually millions of hogs more than the market could absorb at remunerative prices. Foreign takings of our hog products had declined so much more than our production that from seven to eight million hogs, which previously would have gone abroad annually, had to be sold in the domestic market. As a result the purchasing power of corn and hogs was less than half the pre-war average. It was too late, when the Adjustment Act was signed, to prevent another overplanting of corn. Moreover, a spring pig crop 4 percent larger than that of 1932 had been farrowed. But unfavorable weather over part of the Corn Belt indicated that the corn crop would probably be small. It was therefore not imperative to act immediately for reduction of the corn output. In the case of hogs, on the other hand, the situation in 1933 called for immediate action.

The increased number of hogs already farrowed and in the fattening pens, and the comparatively larger number of sows already bred for fall farrowing, foreshadowed heavy production. The June 1 pig survey showed a 13-percent increase over 1932 in sows bred to farrow in the fall. Accordingly, after consulting representatives of the corn-hog producers, the Agricultural Adjustment Administration launched an emergency program to reduce pig and sow numbers. In August 1933 it began buying pigs weighing from 25 to 100 pounds under a schedule of minimum prices, and also sows weighing not

less than 275 pounds and due to farrow, at their regular daily prices for packing sows on the animal's full weight plus a bonus of \$4 a head. In a buying program extending through September the administration purchased 6,188,717 pigs and 223,247 sows due to farrow. Many packing concerns at 80 points acted for the administration in these transactions. About 1,833,650 head of the pigs were large enough to process into meat. The lighter pigs yielded fertilizer, tankage, and inedible grease. Meat obtained from the heavier pigs and from the sows totaled more than 100 million pounds. It was distributed to needy families through the Federal Emergency Relief Administration.

This emergency program reduced market supplies of hog products for the 1933–34 season by more than 1 billion pounds, or about 10 percent of the average annual production. Toward the end of 1933 and during the early part of 1934 the Federal Surplus Relief Corporation purchased directly about 1,400,000 live hogs and approximately 100 million pounds of lard and cured products. These operations helped to keep hog products on a higher level through the winter and spring of 1933–34 than they would otherwise have held.

More Permanent Program

Then the administration considered a more permanent corn-hog program. In the past the gross value of the corn crop has been greatest in years of production 10 to 20 percent below the average normal. This fact, together with changes in the corn-hog situation in recent years, made it desirable that corn production for the United-States as a whole in 1934 should be reduced 15 percent or more below the average for the 2 preceding years. In hog numbers a reduction of approximately 20 percent seemed desirable. The administration called these facts to the attention of producers and in consultation with their representatives drew up an adjustment program. It was improbable that all producers would participate. Therefore, in order to obtain the desired adjustment, the administration offered the growers a contract requiring the individual signer to reduce his corn acreage by 20 percent and his hog production by 25 percent. The contract was ready early in 1934, by which time county and community committees of producers had been organized to facilitate local administration of the work.

Approximately 1,160,000 producers, representing all the States, signed the contracts. In the Middle West, where the bulk of the commercial supplies of corn and hogs are grown, the contracts covered from 75 to 85 percent of the average annual production. On the acreage withheld from corn production, participating producers received payments from the Government at the rate of 30 cents a bushel on the estimated yield. For the reduction in hog numbers they received \$5 per head for each 3 out of 4 head of hogs raised on the average from litters farrowed during the 2-year base period, December 1, 1931, to December 1, 1933. As in the case of the cotton-wheat-, and tobacco-adjustment programs, funds for the corn-hog production payments came from processing taxes.

The 1934 corn acreage was materially reduced below the 1932-33 acreage. According to the July crop report it totaled 92,526,000

planted acres—12.3 percent below the 2-year average. The acreage reduction in the North Central States was 18 percent of the 2-year average. However, the acreage reduction reduced corn output far less than did the drought. Corn production in 1934 dropped more than a billion bushels below the annual average of about 2,600,000,000 bushels. Only about 300 million bushels of the decrease can be attributed to the average-reduction contracts.

Factors in Corn-and-Hog Income

Income from corn and hogs depends on several important variable factors, the separate influence of which cannot be accurately measured. Adjustments in supply are, of course, important. But there are other important factors, such as processors' and meat distributors' margins, marketing costs, consumers' incomes, and consumers' expenditures for pork and lard. On a given level of purchasing power, consumers as a group tend to spend annually about the same percentage of their incomes for pork and lard. In other words, their consumption of hog products varies inversely with the prices. On the other hand, the total amount of money taken for processing, distribution, and transportation varies directly, within reasonable limits, with the volume of hogs marketed. These conflicting tendencies complicate the problem of reckoning the specific influence of the supply adjustment. It must be remembered, too, that the early sale of pigs and sows saved about 70 million bushels of corn. The closest reckoning that can be made indicates that the net benefit of the emergency and supplemental-purchase programs substantially exceeded their costs.

Essentially the emergency program was a price-supporting and not a price-raising measure. It did not immediately bring about hog-price gains. It is extremely probable, however, that without the emergency program hog prices during the winter and spring of 1933–34 would have been below the extremely low price of December 1932. Marketings in November and December 1933 and January 1934 were very heavy, yet prices did not show more than an expected seasonal decline. It is not yet possible to estimate, with any approach to accuracy, the economic effects of the 1934 adjustment in corn and hog production. Not until the crops of hogs and corn of that period have been sold will it be practicable to figure out the results. Present indications, however, are that the benefits will be very substantial.

For example, the total cost of hogs to packers operating under Federal inspection was greater during the first half of 1934 by about \$80,000,000, or 37.7 percent, than during the corresponding period of 1933. This cost figure included the processing tax which processors paid on all hogs slaughtered. The slaughter tonnage in the first half of 1934 was smaller than in the first half of 1933 by about 500,000,000 pounds, or 8.6 percent. For fewer hogs farmers received substantially more. In the first 6 months of 1934 the cost to packers per hundredweight of hogs slaughtered was \$5.60, as compared with only \$3.72 in the corresponding period of 1933. It should not be forgotten that the proceeds of the processing taxes went to producers in payments on their reduction contracts.

Supplementary Benefits of Adjustment

Besides improving the supply position and raising corn and hog prices, the adjustment programs yielded important supplementary benefits. Much of the acreage withdrawn from corn went into forage crops which resisted the drought better than corn would have done, and provided additional feed. Moreover, the emergency pig and sow program reduced hog production in advance of the drought. Hence it enabled farmers to carry forward to the 1934 and 1935 feeding seasons a considerable supply of corn that would otherwise have been consumed. In an unexpected manner, therefore, the emergency program forwarded production adjustment in the most constructive sense of the term. By conserving feed it mitigated the excessive influence of the drought upon hog production and shortened the swing of the pendulum. Also in areas where crops were almost completely wiped out and the livestock had to be sold, the reduction

payments became crop insurance.

In October the Agricultural Adjustment Administration conducted referendum meetings to ascertain the views of producers as to the advisability of continuing the corn-hog adjustment through 1935. Forty-five States were represented in the voting. Approximately 69 percent of the farmers who voted declared themselves in favor of a follow-up program. Accordingly the Administration decided to offer a new plan as soon as the necessary provisions could be worked out. The plan will probably follow the general outline of the 1934 contract as to control requirements and benefit payments. Many local control associations arranged separate balloting for cornhog farmers who did not sign contracts for 1934. One-third of the participants in this separate balloting voted in favor of a cornhog plan for 1934. The others voted "no." Taking 1934 signers and nonsigners together, the favorable vote averaged about 67 percent of the total vote. About one-half of the producers eligible to vote in the referendum did so.

DAIRY INDUSTRY'S PROBLEM

Dairy farmers benefit substantially from marketing agreements under the Agricultural Adjustment Act, but these agreements do not accomplish all that is necessary. They cannot deal broadly with production throughout our far-flung dairy industry. Drought this year reduced the dairy output temporarily, and lessened the immediate need for planned adjustments of production to market needs. Such adjustments will be necessary sooner or later, however, because the dairy industry has more production capacity than the market requires. It cannot achieve prosperity simply by regulating the flow of dairy products into the market. It will have to develop means of controlling the supply.

Dairying is the largest of our agricultural industries, and perhaps the most complex. It is carried on in all the States, under extremely varied regional conditions. Problems that seem local to the dairymen immediately concerned are really national. Whatever affects the fluid-milk market affects also the market for butter and cheese and other milk products, and vice versa. Some areas have surpluses and others have deficits; and an adjustment program that ap-

peals strongly to the surplus areas may not look satisfactory at all to the deficit areas. Actually, dairying is not a single industry, but a group of related industries, each capable of helping or hurting the others. Unlike some of the other basic agricultural industries covered in the Agricultural Adjustment Act, dairying is on practically a domestic basis. This makes it peculiarly dependent on the level

of domestic purchasing power. In considering means to raise the dairy industry from the depression into which it fell after 1929, the above-mentioned facts must be regarded as fundamental. Important also are recent developments in prices and production. In March 1933 the index number of the farm prices of dairy products was only 71 percent of the pre-war average, as compared with 157 percent in 1929. Since April 1933, however, the index has risen markedly. In September 1934 it stood at 99 percent of the pre-war average. The price gain resulted partly from the general improvement that has taken place in business conditions and partly from the influence of the 1934 drought. Milk production is lower now than it was a year ago, owing mainly to reduced production per cow. As yet there has been no great change in milk-cow numbers, which are considerably above market requirements. Between 1900 and 1934 the number of cows and heifers 2 years old and older kept for milk on farms increased 70.9 percent. or from 15,253,000 to 26,062,000. Consumer purchasing power does not vet exist to support profitably the normal production of so large a number.

Gap Between Production and Consumption

Between 1900 and 1929 the increase in cow numbers merely kept pace with the growth of population. During this period, moreover, the market expanded through an increase in consumption per capita as well as through the growth of population. After 1929, however, milk-cow numbers increased at a rate faster than that required to keep pace with the growth of population. Furthermore, the consumption per capita declined. A widening gap had opened between production and consumption. In certain geographic divisions the increase in cow numbers after 1900 was much more marked than in others. Thus in the West North Central States, the East North Central States, and the South Central States the increases between 1900 and 1934 were 96.2, 71.2, and 98.2 percent, respectively. Hardly any increase took place in the North Atlantic States. These regional differences constitute a stumbling block in the way of Nation-wide cooperation in production control.

It is noteworthy, too, that creamery-butter production increased from 1,054,938,000 pounds in 1931 to 1.752,343,000 pounds in 1933. A marked shift took place from the production of farm butter to the production of creamery butter. There was also a shift from the production of milk for the manufacture of creamery butter to the production of milk for fluid consumption. These changes, like the regional shifts in production, have a significant bearing on the adjustment problem. Overproduction of fluid milk forces more milk into butter and cheese production and complicates the relationship between the producers mainly of fluid milk and those who produce mainly for the manufacturing plants. When the demand for dairy products fell off and overproduction appeared toward the end of

1929 numerous conflicts of interest developed among various dairy groups. As dairy production continued to increase in the face of a declining demand, these differences increased likewise.

Following the passage of the Agricultural Adjustment Act means became available for mitigating the struggle of competing interests. In its original form and through subsequent amendments the measure authorized production-adjustment and benefit-payment programs. marketing agreements, the removal of surpluses from the market. and the elimination of cattle affected with Bang's disease and tubercu-The administration did not immediately launch a program for adjusting production, but it removed quantities of butter from the market and sponsored numerous marketing agreements. Conditions, nevertheless, became worse, and toward the end of 1933 were critical. Accordingly the administration, in consultation with representatives of the dairy industry, attempted to work out a production-adjustment program.

Temporary Benefit of Butter Purchasing

In undertaking the removal of surplus butter the administration recognized that the benefit could be only temporary. It acted at the request of dairy leaders, who pledged their support of a more thoroughgoing procedure looking to the regulation of production as well as of marketing. Through various channels, the administration purchased 51,572,265 pounds of butter, including about 11,000,000 pounds through Land O'Lakes Creamery, Inc., a cooperative organization. Nearly all this butter, and also about 6,000,000 pounds of cheese similarly purchased, went into relief channels. The purchases reduced excessive storage holdings of butter and cheese without materially affecting the long-time situation as a whole. It had been expected that the dairy industry would follow up the surplus-removal program with a concerted attack on overproduction. Regional and other difficulties interfered.

In the spring of 1934 the administration invited dairy farmers and others concerned to offer proposals for improving the dairy situation. Many came in. They fell generally into the following categories: (1) Allotment-benefit payment plans; (2) restrictions on the production and sale of dairy products; (3) restrictions on the manufacture of oleomargarine; (4) reductions in cow numbers; (5) the drying-off of cows; (6) feed-reduction programs; and (7) Government advertising of dairy products. Some of these proposals were economically unsound. Others were beyond the scope of the Agricultural Adjustment Act. Others could not furnish quick results, and still others could not apply to the dairy industry as a whole. Finally, the administration offered an adjustment program

for consideration by farmers at regional meetings.

The program contemplated benefit payments to farmers who signed contracts agreeing to reduce their sales. They were to reduce their marketings from 10 to 20 percent, and were to get payments of approximately 40 cents a pound on the poundage of milk reduced below their base poundage. It was estimated that the benefit payments would have totaled about \$135,000,000. Funds to pay them would have been derived from a processing tax of 5 cents a pound on all sales of butterfat in all forms, and from a compensating tax on oleomargarine. It seemed, when the administration offered this program, that continued heavy overproduction of milk was inevitable. It was, of course, impossible to anticipate the drought, and production under normal conditions would have greatly exceeded requirements.

Dairymen Not United

Dairy farmers, however, were not sufficiently united in favor of the program. In fact, they appeared to be about equally divided for and against it, or against parts of it. It is a fixed rule of the Agricultural Adjustment Administration that no program shall be put into effect unless a substantial majority of the producers affected indicate their intention to cooperate. Accordingly the plan was held in abeyance. Since then milk production has been so reduced by the drought that no general dairy adjustment program was needed during 1934. Reduced pasture and short feed supplies are tending to hold down production, and may even result in supplies smaller than would have been obtained by the proposed sales-reduction program. Prices of dairy products may go higher than they would have done under the program, and higher than is desirable. Nevertheless the benefit will not be distributed equitably among producers. It will go largely to those not affected by the drought.

Action under the Agricultural Adjustment Act to improve dairy conditions now includes simply: (1) The issuance of licenses setting minimum prices to producers and carrying market stabilization features; (2) the development or administration of marketing agreements for the butter, evaporated milk, and dry-skim-milk industries; (3) purchases of butter and cheese for distribution through relief channels; and (4) the removal of cattle afflicted with Bang's disease and bovine tuberculosis. Cattle buying in the drought-relief program of 1934 included, of course, the purchase of many dairy cattle,

but mainly this took the place of normal culling.

Elimination of Diseased Cattle

The La Follette amendment to the Jones-Connally Act appropriated \$50,000,000 to be used (1) in the elimination of cattle affected with Bang's disease and bovine tuberculosis, and (2) in the removal of surplus dairy and beef products. Of \$30,000,000 tentatively allotted to disease projects, \$17,000,000 has been set aside for the elimination of cattle affected with Bang's disease, and \$12,000,000 for the elimination of those affected with bovine tuberculosis, \$1,000,000 remaining unallotted. Farmers signing contracts are to receive indemnity payments ranging up to \$20 per head for grade animals and \$50 per head for purebred animals. It is contemplated that about 1,300,000 disease-infected animals will be eliminated over a period of 18 months. This program has already been put into operation, and will be stressed when the current glut of cattle markets engendered by the movement of cattle from drought areas has subsided.

SUGAR

By means of legislation passed in May 1934, the administration developed a comprehensive sugar program which provided the mechanism for the solution of difficult problems arising in an important

agricultural industry. The legislation embodied recommendations contained in a Presidential message to Congress dated February 8, 1934

Sugar cane and sugar beets were made basic agricultural commodities under the Agricultural Adjustment Act and base quotas for continental beet and cane sugar were set forth. The Secretary of Agriculture was directed to ascertain the Nation's annual sugar requirements. He was empowered to allot quotas among the various insular and foreign sugar-producing areas; to establish marketing allotments for individual processors; to levy a processing tax on sugar; to include provisions governing labor conditions in sugar agreements; to purchase a substantial quantity of surplus beet sugar; and to enter into contracts with producers for acreage control.

Broadly speaking, the sugar program sought the following ob-

iectives:

(1) To retain sugar-cane and sugar-beet production in the United States at approximately the average level of recent years' production.

(2) To assure fair returns to the domestic producers by means of

benefit payments made from processing tax funds.

(3) To stabilize sugar production in Puerto Rico, the Philippine Islands, the Territory of Hawaii, and the Virgin Islands at a level harmonious with consumption requirements of the United States and with the economic welfare of the various insular areas.

(4) To arrest the decline of the imports of Cuban sugar into the United States, so as to increase the Cuban market for American

products.

(5) And, by reducing the duty on imported sugar, to prevent a

rise in the price of sugar occasioned by the processing tax.

The Jones-Costigan amendment to the Agricultural Adjustment Act established a base quota of 1,550,000 short tons for continental beet sugar and 260,000 short tons for continental cane sugar. The legislation provided that the basis for determining the annual marketing quotas for the Territory of Hawaii, the Philippine Islands, the Virgin Islands, Puerto Rico, and for foreign countries should be the average quantities of sugar brought into the United States from the respective outlying areas for consumption in the three most representative years during the period 1925 to 1933. By proclamation of the President, taxes collected upon the domestic processing of sugar from the insular areas may be held as separate funds in the names of the respective areas, and are to be used for the benefit of agriculture through benefit payments for acreage reduction and for the expansion of markets and the removal of surpluses.

Comprehensive Program Authorized

In short, the act furnished the means for a comprehensive attack upon the problem of steadily increasing sugar production in the United States and insular regions, which occasioned a serious threat to prices and was primarily responsible for the substantial reduction American exports to Cuba in recent years. The mechanism provided in the act was necessarily complicated by the fact that the United States depends on imports and receipts from the insular areas for about 75 percent of its sugar, so that virtually nothing

could be accomplished through domestic adjustments unaccompanied by regulation of imports and adjustment of insular production.

Action to apply the various provisions of the act went forward immediately after its enactment on May 9, 1934. A processing tax was levied on sugar of 0.5 cent per pound, raw value. Simultaneously, the tariff on sugar was reduced by an amount equal to the processing tax. By this means the administration obtains its funds for carrying out the programs for the benefit of producers without placing an additional burden on the consumer. To prevent the accumulation of surplus stocks of sirup, of cane juice, and edible molasses, and depression of the farmer's price for cane, the administration levied a processing tax on these commodities of 0.125 cent per pound of total sugar content, as compared with the tax of 0.5 cent per pound on sugar.

The sugar consumption requirements of the continental United States were established at 6,476,000 short tons, raw value, for the calendar year 1934, and quota regulations were issued accordingly. The marketing quota for United States beet sugar was 1,556,166 short tons and for cane sugar 261,034 short tons. The quotas for Cuba and the insular areas were: Cuba, 1,901,752.14 short tons, raw value; Philippine Islands, 1,016,185.68; Puerto Rico, 802,842.20; Territory of Hawaii, 916,550.16; and the Virgin Islands, 5,469.81. For foreign countries other than Cuba, a reserve of 17,000 short tons was set aside to be allotted subsequently. Quotas of refined sugar were also established as part of the total quotas, as required by the

On the whole positive and effective steps have been taken to stabilize the continental and insular sugar industries. At the same time adequate imports of sugar have been provided to preserve substantial foreign purchasing power for American agricultural and other products. The insular possessions will receive compensation out of the proceeds of the domestic processing tax placed upon their sugars. Processing-tax funds will provide annually up to \$10,000,000 for disbursements in the Philippine Islands in the furtherance of agricultural benefit programs; \$9,000,000 for the Hawaiian Islands; \$8,000,000 for Puerto Rico; and \$50,000 for the Virgin

Islands.

Adjustment in the United States

In the United States a program has been launched for the adjustment of sugar-beet and sugar-cane acreage. Separate adjustment contracts have been drawn up for sugar-beet and sugar-cane growers. The contracts provide for adjustments of production, though not necessarily reductions, for the crop years 1935 and 1936, and for benefit payments for 1934, 1935, and 1936. The administration expects to make the first payment to cooperating growers before January 1, 1935, and another payment on the 1934 crop in the spring of 1935. It is estimated that these payments, the first of which will exceed \$8,000,000 and the second of which will be approximately \$4,000,000, will increase the average income of producers by more than \$100. The provisions of the adjustment contracts are drawn so as to permit the application of the benefit payments as partial crop insurance.

RICE

In dealing with rice, a basic commodity under the Agricultural Adjustment Act, the administration moved to raise the income of the growers through marketing agreements rather than through a combination of processing taxes and benefit payments. It adopted this method because the rice industry is comparatively small and geographically compact, and because the rice growers have had considerable experience in cooperation. The administration negotiated agreements with the California rice industry and with the southern rice industry whereby the mills agreed to minimum prices and conversion charges and the growers undertook to control their

production through acreage allotments.

The rice acreage of the United States nearly doubled during the World War. In 1920 it was 1,299,000 acres, as compared with 694,000 acres in 1914. Moreover, yields per acre increased gradually. As a result the production exceeded domestic requirements and put the American rice industry definitely on an export basis. In the 1921–22 season our rice exports amounted to nearly 20,000,000 bushels, as compared with only 3,000,000 bushels in the 1914–15 season. Subsequently the export movement declined, but it remained substantial. From 1926–27 through 1930–31 the annual rice exports ranged from 10,000,000 to more than 14,000,000 bushels. A material reduction in the rice acreage after 1930 did not take the industry off an export basis. The exports totaled 6,400,000 bushels in 1932–33 and the rice imports were very small.

This continuance of our rice industry on an export basis did not signify that an adequate export demand existed. On the contrary, the opportunity to sell rice profitably abroad steadily declined. Other countries assisted their producers with bounties and other forms of direct aid. Moreover, rice-importing countries were unable, owing to the depression, to purchase their normal quotas. Meantime the United States produced large crops. In 1930 and 1931 yields above normal on an unusually large acreage resulted in two crops of nearly

45,000,000 bushels each.

As a consequence of the reduced export demand and of our increased production, the domestic rice carry-over increased from 81,000,000 pounds in 1930 to 220,000,000 pounds in 1932. Though the carry-over declined in 1933 to 148,000,000 pounds, it remained the second largest on record, and prices dropped to a very low point. Rough-rice prices, which during the period 1921–29 averaged about \$1.10 a bushel, fell to 78 cents a bushel for the 1930 season, to 48 cents for the 1931 season, and to 42 cents for the 1932 season. In short, the position of the rice industry was identical in principle with that of the wheat industry, the cotton industry, the tobacco industry, and the hog industry. Burdened with excessive production for export, it could not get remunerative prices even for rice domestically sold.

Agreement Included Crop Control

Accordingly, on September 25, 1933, the Agricultural Adjustment Administration approved an agreement, which included a crop-control program for 1934-35, for the California rice industry. Later an agreement and license for the southern rice-milling industry became

effective. In 1934 the southern agreement was revised to include a crop-control program. Parties to the California agreement are the Secretary of Agriculture, the rice millers of California, the Rice Growers' Association of California, and the independent rice growers' committee. Parties to the southern agreement are the Secretary of Agriculture and the rice millers of Arkansas, Louisiana, Texas, and Tennessee. As subsequently revised, the southern plan provided acreage allotments for individual growers. In both the California and the southern regions the production-control plan allots acreage among growers on the basis of their past production and gives an advantage in returns to the growers who cooperate.

In order to give the cooperating growers an advantage over non-cooperators, the California mills pay 60 percent of the agreed price when growers deliver rice. The balance goes into a growers' trust fund. Cooperating growers share in the final distribution of the trust fund according to their production units, which are based on their past history. Noncooperating growers receive no share in the trust fund. Of the total rice acreage planted in California, approximately 93 percent is within the scheme. Southern growers who made application for production quotas will receive full payment of the price established by the marketing agreement for all rice sold up to the amount of their quotas. Signatory millers purchasing nonquota and overquota rice have agreed to pay the producer 60 percent of the price set in the marketing agreement and to pay the remainder in to a trust fund held for distribution by the Secretary. It is estimated that over 95 percent of the southern growers applied for quotas.

Object of Program Achieved

The control programs were undertaken largely to prevent an increase in rice acreage, and accomplished that purpose. The total rice acreage this year was 737,000 acres, according to the July 1 estimate, as compared to 769,000 acres last year. The September 1 estimate of production was about 36.5 million bushels, slightly more than that of 1933. Growers benefited from the marketing agreements in selling their 1933–34 crop. The average farm price for all grades and varieties of that crop was 76 cents a bushel, or nearly twice the average price received for the 1932–33 crop. The total carry-over in first and second hands on August 1, 1934, was considerably greater than that of a year ago, but stocks in wholesalers' and dealers' hands were unusually light. The Federal Surplus Relief Corporation purchased 50,000 pockets of rice, and as a result the net carry-over in commercial hands will be about the same as last year.

TOBACCO

Considerable progress was made during the year in adjusting the supply of the various kinds of tobacco to the demand and in improving the income of tobacco growers. Approximately 275,000 growers in the United States and 10,500 in Puerto Rico entered into adjustment contracts in 1934, under which production was reduced about 30 percent. The United States crop of approximately 1,000,000,000 pounds in 1934 is about as much below the level of world consumption of this tobacco as the 1933 crop was above that level.

Six marketing agreements were negotiated for the principal kinds of tobacco grown in the United States. Under these agreements domestic buyers agreed to pay higher prices for their purchases from the 1933 crop on the basis of reductions to be made in the 1934 crop. The quantity of tobacco purchased under these agreements aggregated 633,000,000 pounds, which was nearly half the total production in 1933. It is estimated that the tobacco program increased the market receipts from the 1933 crop by approximately \$50,000,000 above what they would otherwise have been. In addition \$28,000,000 was paid to tobacco growers in the form of rental and benefit payments.

Altogether growers received approximately \$207,000,000 from tobacco during the current marketing year, compared with \$107,000,000 during the preceding marketing year. This total income is close to what tobacco growers received for their 1930 crop, and is only slightly below the average for the last 10 years. Prices of tobacco in Puerto Rico increased about 40 percent after the adjust-

ment program was started.

At the beginning of the marketing year for the 1933 crop there was in the United States a surplus of 900,000,000 pounds of all types of tobacco above the carry-over which would be considered normal for the rate of consumption then prevailing. The production-adjustment programs were undertaken to relieve the market of this surplus. Extreme differences in the conditions of production, market outlets, and prices, and the highly specialized nature of the problems involved, necessitated separate contracts for 11 different kinds of tobacco.

Effect of Monetary Policy

The increase in the price of gold during the past year from \$20.67 to \$35 an ounce had a stimulating influence on our export trade in tobacco, because of the increased purchasing power of foreign currency in relation to the American dollar. Tobacco exports from the United States during the year ended June 30, 1934, were 456,000,000 pounds, compared with 379,000,000 pounds a year earlier and 413,000,000 pounds 2 years earlier. Some increase of sales was obtained through exchanges with countries that export wines and liquors to the United States. Additional outlets may be found in negotiations conducted under the new Reciprocal Tariff Act, though progress will inevitably be slow.

The results accomplished by the adjustment programs demonstrate the importance of controlling the production of tobacco. From 1923 to 1932 the grower's share of the consumer's tobacco dollar declined from slightly more than 12 cents to 4½ cents. Meantime the share received by tobacco manufacturers in the form of profits increased from 5½ cents to more than 10 cents. In 1933 tobacco growers received approximately 10 cents of each dollar paid by consumers for

tobacco products and manufacturers received about 7 cents.

The consumption of tobacco products is relatively more stable than the consumption of most other farm products. In 1923 the total world consumption of United States tobacco was approximately 1,225,000,000 pounds (farmers' sales weight), of which 725,000,000 pounds were used in the United States and 500,000,000 pounds in foreign countries. Total consumption gradually increased both in

the United States and in foreign countries until 1929, when it was about 1,400,000,000 pounds. Consumption of all United States types of tobacco declined from 1929 to 1932, and during the latter year was only 1,225,000,000 pounds, or back to where it was 10 years earlier, both in the United States and foreign countries. In 1933 the world consumption of our tobacco showed a small increase.

Flexibility in Contracts

Flexibility in the adjustment contracts has been an essential factor in facilitating the control of tobacco production. The acreage and production of tobacco on individual farms vary widely from year to year; hence in drawing up the various contracts it was advisable to give producers operating under different circumstances several choices as to the year or years used in establishing their base. After the sign-up campaign for some of the kinds of tobacco was under way, it became evident that additional choices of base would be required to make it possible for some growers to obtain equitable

allotments, and additional choices were provided.

A unique feature of the tobacco contracts is that, with the exception of cigar leaf tobacco, they all provide for definite allotments of production on individual farms as well as acreage allotments. With specific allotments of production, such as those provided under the tobacco contracts, it is possible to determine more definitely the exact size of crop which is likely to be produced and to make adjustments in the quantity to be marketed. Under these contracts adjustments of production allotments may be made after the crop has been planted and before selling time, on the basis of current prospects for production and demand. The contracts for cigar leaf tobacco were offered growers for the 1933 crop during the planting season, and consequently there was but little opportunity for growers to increase the yield per acre of that crop. The 1933 plan for the cigar leaf tobacco is being continued in 1934, which offers an opportunity for determining the relative merits of the different types of contracts for tobacco.

Growers who participate in the tobacco programs receive two classes of payments. The first payment is made in the form of a "rental", and is at a uniform rate per acre for each kind of tobacco upon the number of acres taken out of tobacco production, regardless of productivity. The second payment—and the third payment, in cases where a third payment is provided—are based upon the net sale value of the tobacco grown on the farm. In this way the payment reflects the yield and quality of the crop produced, and thus more nearly compensates each producer in accordance with the opportunity he has given up because of participating in the adjustment program. This method of determining payments was found to be advisable in the case of tobacco, owing to the extreme variations in yields and prices of tobacco on different farms.

Approximately one-third or more of the total payments made under most of the tobacco contracts are rental payments, which are made regardless of production in the current crop. In the case of other payments, minimum rates are provided for in each contract, and growers are guaranteed at least these minimum payments, regardless of the volume of their production. In some of the contracts

the minimum rates are stated in terms of a specified number of dollars per acre of the rental acreage. In others, provision is made for a deficiency payment to be made on each pound that the grower's production may fall below his allotment. Insurance against a partial or total crop failure is thus provided.

Kerr-Smith Tobacco Act

The Kerr-Smith Tobacco Act, approved June 28, 1934, was passed by Congress in response to requests of a large number of tobacco growers, as a supplement to the tobacco programs inaugurated under the Agricultural Adjustment Act. It provides for the levying of a tax of 33½ percent upon the sale price of all tobacco of any type covered by a production-adjustment program, except during 1934–35 the tax shall not be applied to Maryland, Virginia sun-cured, and cigar leaf tobacco. The act further provides that if it is determined that a lower rate of tax would best effectuate its declared policy, the rate may be not less than 25 percent. For the crop year 1934–35, the rate of the tax has been established at 25 percent. The tax may be levied upon tobacco harvested during the crop year 1935–36 of any type covered by a production-adjustment program, provided three-fourths of the growers of that type favor the levy.

The act provides for the issuance of tax-payment warrants to all producers operating under a production-adjustment contract, and for the issuance of such warrants to noncontracting growers in each county up to an amount of tobacco equal to 6 percent of the number of pounds covered by warrants issued to contracting producers. Tobacco growers who did not sign adjustment contracts prior to the passage of the Tobacco Act were given 30 days from the date on which it was approved, June 28, 1934, during which to sign such contracts. All contracts signed during this 30-day extension period provide the same benefits and require the same performance as those

entered into during the regular sign-up campaign.

With the very large sign-up that has been obtained under the tobacco contracts, and with the provision for issuing additional tax-payment warrants to noncontracting growers, it is believed that only a very limited number of growers will be required to pay the tax upon tobacco harvested in 1934.

UNEMPLOYMENT AND SUBSISTENCE FARMING

It is impossible to consider only the farmers in promoting farm recovery. Crop adjustments affect nonagricultural interests profoundly. They affect the price and the volume of the farm output, and thus influence both the cost of living and the employment that depends on the handling of agricultural goods. Moreover, by limiting farm production, the crop adjustments tend, though not in any serious degree, to create rural unemployment. Whatever restrains production reduces the need for man power. The Nation's farm program therefore creates certain responsibilities toward nonfarmers. This fact the Agricultural Adjustment Act recognizes in its declaration of policy, which lays down a course of action conceived in the national interest rather than in the interest exclusively of the farmers. It calls upon the community as a whole to do some things

for agriculture, on the assumption that the resulting benefit will be shared nationally. The idea, in short, is that farm relief will prove to be national relief.

In certain respects the implied obligation to aid agriculture only in ways consistent with the general interests creates no difficulty. Action taken to raise farm prices adds something to the cost of living, but provides compensation by improving the rural market for city products. It creates the urban purchasing power needed to absorb the costs. Consumers do not find the higher prices burdensome because the increased farm income flows into the channels of trade. There is a quickening of our whole economic life. In other respects, however, the problem is more complicated. Particularly is this the case in connection with unemployment, upon which as already noted the crop adjustments have a definite bearing.

In hard times the unemployed look naturally to the land. They cannot be refused access to it; and yet to admit them into agriculture unconditionally would involve removing certain restraints upon agricultural production. Here is a dilemma. On the one hand, the progress of agriculture absolutely requires a limitation of farm production and therefore of farm employment. On the other hand, national expediency forbids closing the rural country to the urban

unemployed.

Crop Controls Cause Little Unemployment

The Agricultural Adjustment Act creates very little unemployment. Farm owners, and tenants with a reasonably secure tenure, do not become unemployed through crop reductions. Hired labor and certain types of tenants, notably the share-croppers of the South, may occasionally suffer. But the Agricultural Adjustment Administration endeavors to protect these groups. In cotton and tobacco contracts it stipulates that landlords as far as possible shall maintain their normal force of tenants or hired hands. By comparison with other causes of rural unemployment, such as the interruption of the flow of rural population to the towns and the flight of city people to the country, the influence of crop adjustments is negligible. Between 1929 and 1933 nearly 2,000,000 people left the towns.

Six Southern States last spring reported having on their relief rolls from 15,000 to 40,000 farm families per State. For the most part, however, these farm families had been thrown into distress by the depression. Undoubtedly the number would have been greater had the adjustment program not increased the income from cotton in 1933. Moreover, the great majority, perhaps 75 percent, were still on farms in one capacity or another. They were not entirely without means of self-support. Considering the country as a whole, the crop adjustments relieve far more unemployment than they create. Scores of towns and cities throughout the country, which 18 months ago were in the depths of depression, have picked up under the influence of restored farm buving.

It is nevertheless true that farm recovery, with its need for restraints on farm production, goes against the natural desire of the urban unemployed to seek refuge on the land. In this matter the agricultural interest—the necessity for farmers to curb their competition—must to some extent give way. There are many millions of

unemployed in the United States. Their maintenance is a public charge, which cannot be repudiated. About one-third of the families on relief rolls are already in the country or in country towns. Moving an increased proportion from the congested centers of population doubtless would reduce in many cases the expense of maintaining them. Living costs are much lower in the rural communities, and the country affords a chance for the unemployed to produce some of their own food. To some extent the shift is necessary.

A Counterweight to Farm Recovery

Such a shift tends to deprive commercial farmers of a part of their urban market. Moreover, it tends to increase farm competition. So-called "subsistence farming" cannot be entirely noncommercial. Inevitably it produces something for sale. This is a counterweight to farm recovery which farmers will cheerfully accept in an emergency. But they have a right to urge that its effects be tempered as much as possible. We ought not to adopt a defeatist attitude, and to say the only thing to do with urban unemployment is to push it into the country. That simply means dividing a reduced agricultural income among an increased number of persons. It is far better to push industrial recovery. Meantime, we must handle the situation with the least injury to established agriculture.

Subsistence farming has been suggested as a solution—i. e., farming not for the market but for the home table. This is a difficult aim. Farm families require a cash income to supplement what they can grow for their own use. Unless they can earn money off the farm, they must get it from the farm. Otherwise the subsistence

farm does not furnish subsistence.

Established farmers have a right to insist that nonfarm sources of cash income be made available when the country establishes unemployed people on the land. Placing thousands of families on the land, with no other source of income, drives them into commercial farming. They may not produce any great quantity of goods for sale, but what they do produce will be sold at distress prices. Such fostered marginal production can do great harm. So far the movement to put city people on the land has run ahead of the provision for supplementary employment. People have been decentralized faster than industry, and established farming suffers. Part-time nonfarm work must go along with so-called "subsistence farming."

nonfarm work must go along with so-called "subsistence farming."

The task is full of difficulties, which must nevertheless be faced. Centralized industry grew up in its present locations in the pursuit of profit. To decentralize it, not primarily for the sake of profit but in order to furnish employment in new locations, should not be attempted hastily. In thus trying to improve the conditions of employment, the profit motive cannot safely be ignored. To do so may do more harm than good. Redistributing labor and industry over the countryside is a delicate operation. Yet not to try it means destroying the essence of the subsistence-farming movement, and turning it into an unregulated and uneconomic eruption of city people into commercial agriculture. Countryward movements of the unemployed should be accompanied by a sufficient expansion of local non-agricultural employment to provide a local interchange of factory and other goods for farm products. To expand farm production

for local consumption, without at the same time expanding industrial production for local consumption, would simply displace farm products from other regions. It would aggravate the unbalanced condition of agriculture, and would not work any net improvement.

Nature of the Problem Recognized

Relief agencies, both Federal and State, have this well in mind. In one State 49 percent of the unemployment-relief load is rural and 51 percent urban. The State relief agency will have urban-relief groups produce industrial goods, while rural-relief families produce food. Both types of production will be held within relief channels, and a system of exchange will give each person credit for his own production. This method should have wide application, since it furnishes unemployment relief at relatively low cost without seriously complicating farm readjustment. Another State has plans under consideration for establishing manufacturing or processing plants in country communities to furnish part-time employment. These establishments, it is believed, will provide a source of cash income both to urban-relief families newly moved into the areas served and to rural-relief families already there. In yet another State the relief authorities contemplate relocating good families whose adult members were farm-reared. Many such people wish to return to their old neighborhoods but not necessarily to resume farming.

Fundamentally, the question is whether poor folk in town and country should be supported in demoralizing idleness or helped to become self-supporting. Either method involves expense to the rest of the community. Which is the less costly, everything considered? Short-sighted views may prefer straight charity to obviate increasing the intensity of industrial or agricultural competition. But that involves attaching value to work for its own sake, without regard to the destination of the product. It means that the employed elect to work harder, so that the unemployed need not work at all. The other method, whereby urban and rural relief families employ one another through an exchange of services cuts down the relief bill, may have little harmful effect on commercial industry and agriculture and prevents social disaffection. There is nothing wrong with the idea. The danger is that we may not apply it thoroughly; that in practice we may not couple subsistence farming with adequate part-time

employment.

Establishment of Subsistence Homesteads

The Division of Subsistence Homesteads of the Department of the Interior is promoting the true objective. Section 208 of the National Industrial Recovery Act appropriated \$25,000,000 to be used to "aid in the redistribution of the overbalance of population in industrial centers" through assisting in the establishment of subsistence homesteads. Before the close of the fiscal year the Department of the Interior had approved plans for 58 projects, the majority of which are now under way. In each project there are from 25 to 300 homesteads.

Specifically the aim is to help poor families to get a more secure and more satisfactory living through a part-time combination of industrial employment and subsistence agriculture. The homesteads are usually 1 to 5 acres in size. They are capable of producing a large portion of a family's yearly food supply. The cultivation of vegetables, fruits, truck crops, and the care of poultry, and in many cases a cow, comprise the agricultural operations on most subsistence homesteads.

Because the subsistence-homestead plan is a method of aiding in the solution of various social problems, rather than an object in itself, the projects vary considerably. First, there are garden homesteads for industrial workers. Projects of this type are located near industrial towns and cities, where the workers, while living in semi-rural communities are yet able to commute easily to and from their urban jobs. Such projects may tend somewhat to decentralize population and industry. In large urban areas, such as Los Angeles, Chicago, Youngstown, and Birmingham, the decentralizing trend develops within the urban districts through the establishment of suburban areas of subsistence-homestead communities. Small industrial towns, such as Decatur, Ind., Austin, Minn., Taylors, S. C., or Longview, Wash., offer good opportunities for subsistence homesteads under conditions favorable to industrial decentralization.

Projects for Stranded Industrial Groups

Then there are subsistence-homestead projects for stranded industrial groups. Great numbers of people formerly employed in the exploitation of natural resources have permanently lost their jobs through the exhaustion of the resources, as, for example, in certain abandoned coal fields of West Virginia. With the home production of food and shelter on the subsistence homestead as a basis, and with recourse to part-time employment in forests, newly established industries, or handicrafts, many previously destitute families are becoming

self-supporting.

Rural rehabilitation sometimes calls for applying the subsistence-homestead plan to agricultural groups. The submarginal areas of the old Cotton Belt, of the cut-over lands of the Lake States, and of certain dry-farming regions of the northwestern Great Plains have been chosen as demonstration sites. Thus farm families have a chance to move from eroded, worn-out, or drought-stricken sections to subsistence-homestead communities located on good land. Intensive farming, primarily for subsistence, replaces extensive and wasteful cash-crop production. The crops produced for the market are usually not the staples in which surpluses exist. Moreover, the establishment of these new farm homes is offset by the retirement from cultivation of proportional amounts of submarginal land.

LAND-UTILIZATION PROBLEMS

Farm-recovery measures applied up to the present have been of an emergency character. They have been drastic and temporary remedies, necessitated by a collapse in foreign and domestic markets, a tremendous accumulation of farm surpluses, and the virtual bankruptcy of agriculture. How long it may be necessary to continue these expedients with various modifications we cannot tell. Full recovery of the agricultural market may be long delayed. It is

therefore necessary to transform the emergency program into a more permanent policy, whereby we may adjust production at the least cost, with the least disturbance to normal farming, and with the most encouragement to farm efficiency. We must move from

emergency adjustments to long-time planning.

Essential to the welfare, not only of agriculture but of the Nation as a whole, is a better land-utilization policy. This involves systems of land tenure as well as of land use. It is concerned with all the principal land uses, including farming, forestry, recreation, and wildlife conservation. In any sound national economy a rational land policy must be the cornerstone. In this country we have tried many other means; we have not yet tried that. On the contrary, we have retained as a heritage from our pioneer epoch a seriously defective land-use method. Accordingly the Department of Agriculture has established a land-policy section in the A. A. A. which is cooperating with the National Resources Board, the Federal Emergency Relief Administration, and various other Federal and State agencies. It is studying means whereby land that should not be in agriculture may be withdrawn from it, and whereby land properly in agriculture may be devoted to the right crops in the right proportions. This is a social as well as an economic problem. It involves human beings as well as land.

In cooperation with the Federal Emergency Relief Administration, the Department is trying to find new locations for farm families now living in areas naturally unsuited to farming, or untenable as a result of economic changes or of the depletion of soil, timber, or mineral resources. This is a task which must be advanced slowly. Public agencies may desirably purchase poor cultivated lands gradually, but to do so quickly would be nearly impossible. Such action would run into difficulties of negotiation, of title examination, and of survey. It would involve much risk of excessive speculation and possible fraud. Still more important, it would suddenly displace perhaps a million farm families, for whom other employment would be hard to find. Furthering the retreat of agriculture from unsuitable land is a long-time operation. It should not be regarded as a means of effecting production adjustments rapidly. This year the Government is developing plans to acquire submarginal lands in about 30 States; but the purchases in view will total not more than 4,000,000 acres, only about half a million acres of which will be cultivated land. These figures give some idea of the difficulties.

It is, of course, extremely desirable to promote the retirement of lean acres from cultivation. The problem of submarginal areas is partly a problem of local maladjustments. Attempts to cultivate barren acres mean a wastage of human efforts and of natural resources. Frequently the land would be much more valuable in forests, recreation areas, or wildlife refuges. Important advantages result from the regrouping of rural populations, so as to obviate unnecessary costs of local government in sparsely settled areas. Action should be taken to prevent the reoccupying of abandoned poor farms. Such steps promote the welfare of the people immediately concerned, and harmonize with our national crop-adjustment programs. Our present emergency adjustments apply to good land and poor land alike; to well-farmed and ill-farmed land. Frequently they necessitate the disuse or less effective use of buildings,

implements, work stock, and labor. They may disturb the general farming plan and the rotation system, and complicate the relations of landlords and tenants. As rapidly as it can be developed, we should employ a more discriminating program, in which the permanent withdrawal of land unsuited to farming will play an important part.

Soil-Depleting Practices

As I mention elsewhere in this report, soil erosion in many parts of this country is undermining the foundation of economic and social life. But erosion is only one source of soil depletion—only one aspect of a process of soil mining which should be stopped. Through practices which became habitual in our pioneer period, and which continued throughout extensive areas, millions of acres have been ruined for cultivation. These areas in many cases may be restored to usefulness through reforestation or through their allocation to other nonfarm uses. A much larger area not yet abandoned is declining. Some of it was always submarginal. Much of it has become so. It should be acquired by public agencies which may find for it many

profitable uses.

On much land that may continue in farms, permanent pasture and forage should be substituted for intensive crops, and systems of rotation should be introduced to check erosion and restore or maintain fertility. But to do this in many areas would reduce commercial Sometimes that would be entirely compatible with the production. farmer's immediate interest. Again it would not. Farmers, if left to themselves, would in many cases continue their soil-exhausting practices. As one remedy, the Department is studying the possibility of using crop-benefit payments to encourage types of farming adapted to soil conservation. It is examining the practicability of inducing farmers, through crop-adjustment contracts, to bring about collectively a more desirable allocation of the land in farms among different farm enterprises. It may eventually be possible for the Government to purchase easements which would give it the right to require certain practices tending to soil conservation. means may be developed gradually to replace the emergency crop adjustments with a long-time program to promote permanently efficient farming and social stability.

Farm holdings in many parts of the United States should be readjusted in size. In some areas they are too small and in others Without Government initiative the necessary readjustment will not occur or will occur but slowly. Larger farming units in some regions will make possible a wider use of pasture and of soilconserving crops. Credit policies could be shaped to promote the blocking up of small farms into larger units. It need scarcely be said that action to increase the size of farm holdings would have to be coupled with provisions for the relocation of many farm people, for obviously an increase in the average size of farm holdings may mean a decrease in the number of farm families. On the other hand, farm holdings are now too large in certain areas where creditor institutions and agencies have taken over considerable tracts without having the means to farm them well. Moreover, many plantation owners in the South can no longer operate their plantations by the old methods, which called for annual advances to croppers. In such areas public agencies might help to establish farming on a family basis. In some localities changes in the average size of farm holdings would involve a less intensive, and in other localities a more intensive, use of the land.

No Fixed Adjustment Possible

In all agricultural planning, emergency and long-time alike, we must seek a continuing and not a fixed adjustment. We cannot accurately forecast the effective demand for farm products a year ahead, to say nothing of 10 years or 20. General economic recovery at home and abroad would change the whole situation. Further economic difficulties would change it in the opposite direction. Neither crop adjustments nor land planning can insure a continuously stable balance. Flexibility in production and in land policy is the only means by which stability can even be approached. We cannot expect to eliminate the tendency for production in particular crops to get out of line with demand; nor can we plan the general size of the farm plant and the general distribution of farm enterprises for a long time ahead. Every period of good times creates new farms. With every prospect of better conditions, real-estate interests stimulate the demand for land and eager individuals push into new areas. It is neither possible nor desirable to put agriculture in a straitjacket. Nevertheless, we should constantly strive to prevent known wrong uses of land. Mistaken expansion, once it has occurred, tends to persist. Better means of prevention are urgently necessary. Even the lands still owned by the Government are not guarded against unwise use.

By authorizing the Secretary of the Interior to permit homestead entry only on suitable lands, the Taylor bill, which passed Congress at the recent session, provides a partial means of preventing further unwise settlement of the public domain. It applies, however, only to about half the total area. The public should have a voice in determining whether privately owned land as well as Government-owned land should be settled, because settlement obliges State and local agencies to build schools and roads and to furnish other services. They should not be compelled to bear this heavy expense for sparse and scattered populations and perhaps for very transitory settlers. Public agencies must furnish relief from the effects of unwise settlement. They are spending millions already to correct bad effects of our homestead policy, persisted in after the lands for which it was adapted had been taken up. They are spending considerable sums to aid families in moving from land which should never have been In land-use planning, a first essential is to prevent the farmed. repetition of past mistakes.

Much may be done by the States to promote sound methods of land use. Zoning may help to prevent unsuitable or hazardous settlement. Eventually this principle may come to have an important place in rural land policy, just as it has already in urban land policy. Wisconsin has adopted zoning ordinances in some of its cut-over counties, and several other States have made a beginning in rural zoning, though mainly in suburban territory. States may find it desirable to adapt their grants-in-aid policies toward the same general end. By this means they might guard against some of the abuses

that come from the occupancy of new areas by scattering settlers, while continuing to help the poorer districts in providing schools and other necessary facilities. In cooperation with the States, the Federal Government could outline areas unsuitable for settlement; it might also shape credit, emergency-relief, and crop-benefit policies to discourage unwise settlement. It might acquire easements which would authorize it to prevent the settlement of areas not suited to farming. In our land system Federal and State policies must go hand in hand. Land policies frequently are local in activity and initiative, but they should be national in procedure and scope and should serve national as well as local ends.

It need scarcely be said that land planning involves questions concerning not only agricultural lands, but also lands adapted to other uses. Indeed, we cannot entirely separate the agricultural from the nonagricultural uses of land in a well-rounded program. The depletion of forests, minerals, and game resources causes both urban and rural harm. It affects employment in both town and country. Many rural communities depend greatly on part-time nonfarm work. Vast areas of nonagricultural land, for which we have at present no constructive use, might be made profitable through Federal and State cooperation in developing a unified land policy. Large tracts formerly in private ownership are tax delinquent. Much tax-delinquent land may not reenter private ownership quickly and perhaps should not. But before public agencies can find good uses for this land, State laws affecting tax delinquency need, in many cases, to be modified; and Federal and State policies need to be harmonized to promote the acquisition and use of such lands by public agencies.

Social Aspects of Land Use

Another vital aspect of the land program is the human aspect. As competition for land increases, two harmful results develop. Land-hungry folk take up areas that should not be farmed, and capital charges tend to become excessive on all farm land. In planning for the welfare of the rural population we must consider both the amount and the distribution of the farm earnings. On land unsuited to agriculture, neither science nor toil can make the return sufficient. Even on good land, farm earnings tend to be absorbed in capital charges and to be more or less diverted from the farm population. Our present agricultural policy seeks a remedy for this twofold evil. On the one hand it strives to direct agricultural enterprises to the right crops and their right lands. On the other hand, it seeks to obtain for the farm operator a larger reward for his labor and management. But farm income in times past has risen greatly without permanently safeguarding farm welfare. What we are doing now to increase farm earnings will not produce a better final result automatically.

The welfare of farm families depends greatly, in short, upon the conditions under which men work the land. Our system of unrestricted, private ownership developed in a reaction against the restraints of earlier tenure. It served the country well enough during the period of agricultural expansion into new areas. But we see now that it conferred the right not only to use but to abuse natural resources and to burden the land with excessive capital charges.

Perhaps we have gone too far in allowing freedom in the transfer and use of land. Such freedom does not necessarily cause land to fall into the hands best able to use it. Individuals cannot always follow their long-time interest, to say nothing of that of the community. In seeking his own gain the individual, with his personal one-lifetime view, may squander soil and soil fertility. He may mine the soil and devastate the forests. In taking steps to guard against such evils in the future, public agencies would protect not only the community but the individual farmer. Wastage of natural resources originates in self-interest, but does not in the long run promote it.

Unrestricted property rights do not necessarily insure the welfare even of farm owners. Complete license to buy and sell land, and to use it in any manner that seems desirable, ultimately burdens the farmer with heavy fixed charges. As farm earnings increase, land values rise. Farmers obligate themselves for more than the land can earn continuously. A severe price decline ruins them. On overcapitalized farms, even a small decrease in the income from products sold may bankrupt the farm operator; it will certainly make his farm ownership illusory. It will tend to separate the ownership from the operation of the land, and to degrade the economic status of the farm family.

Growth of Farm Tenancy

For proof we have only to glance at the recent growth of farm tenancy in the United States. Farm tenancy is not good or bad in itself. It has advantages or drawbacks, depending on the conditions under which it develops. Under favorable conditions it enables farm operators of limited capital to become farm owners. It is a stage in their progress toward financial independence. Under other conditions an increase in farm tenancy may signify that farmers are meeting with increasing difficulties in their struggle for land. type of tenancy we have in many parts of this country cannot be generally approved. It involves short tenure and lack of care for the soil. In the prosperous period that preceded the first post-war depression, tenancy increased in some areas because rising farm valuations made it more profitable to rent than to buy land. In the post-war depressions, tenancy increased because farmers who had borrowed heavily to buy or to improve farms could not meet their obligations. They lost their ownership status and became tenants. Some growth of tenancy is inevitable, when growing populations compete for access to desirable land. But a great increase in tenancy, reflecting bad financial organization in agriculture, is another thing altogether.

From the standpoint of better land use and also of better rural welfare, we need to correct the unwholesome features of tenancy. These are the migratory habits it fosters, and the disregard of soil fertility and long-time farm efficiency. In this country the average occupancy of farm tenants is about 2 or 3 years as compared with the average owner occupancy of about 14 years. In certain other countries land occupancy continues in the same family for generations. This is true of tenant occupancy as well as of owner occupancy. Tenancy need not mean brief occupancy, with all its bad results. Many European countries have systems of land tenure which modify some of the socially undesirable features of unrestricted land owner-

ship. In some countries the occupier has the right to use but not to sell the land, while restraints on inheritance prevent extreme and uneconomical subdivision. Some countries require that land shall be efficiently used. It may not be practicable in the United States to adopt these principles, but less drastic changes merit consideration.

Possibilities of Improved Tenure Conditions

It should be possible to promote a more secure tenure, to discourage speculation and absentee ownership, to compensate tenants for unexhausted improvements, and to help deserving small farmers toward land ownership. Such reforms would increase the farm operator's income, without damage to property rights. They are more necessary now than ever before, owing to the prevalence of urban unemployment, which obliges more people to stay on the land. In order that they may do so without unduly increasing agricultural competition, and without paying exorbitantly for the privilege, the conditions of land tenure should be modified. It may be desirable to plan for a larger number of small semicommercial or partially self-sustaining farm families, and for some reduction in the number of large commercial farms. Ordinarily, an increase in the farm population increases both production and fixed charges. As a result, the income of farm operators declines. In the circumstances with which American agriculture must now deal, improved conditions of land tenure would afford a partial remedy.

TYPE-OF-FARMING STUDIES

In projects for using natural resources to better advantage, and for aiding farm families to move from unsuitable land and to relocate in areas better adapted to furnish a livelihood, the results of farmmanagement studies have great value. Investigators in the Department and in the State agencies began farm-management work years ago to help in solving individual farm problems. Eventually it may prove most useful in broad social applications.

In the pioneer period and for long afterward farmers relied on experimentation and experience in developing their farming systems. On the whole the method worked well, but it was costly. Those whom it failed did not complain because they had expected to take chances. But the problem is different when public agencies undertake to direct the use and settlement of land. This is a tremendous social responsibility. It involves risks which only scientific knowl-

edge can minimize.

Failure would involve consequences proportionate to the scale of the operations, and failure would be certain if blind experimentation were the only guide. To prevent it we must have detailed knowledge of the physical and economic factors involved as they affect the well-being of actual and prospective farmers. Failure will discredit directed resettlement far more than it discredited the old free-for-all method under which people regarded heavy casualties as a matter of course. But the most important reason for studying the problem carefully is that without careful preliminary study it will be impossible to do a good job.

Farm-management knowledge, derived from systematic study of the economic and managerial experience and problems of actual farmers, is a kind of generalized experience which may save thousands of persons from repeating the same individual mistakes. are two general aspects of farm-management study, the results of both of which are useful in guiding social effort in resettlement of farms and other adjustment enterprises. The first is a broad study of agriculture and agricultural resources in their relation to the individual farmer's actual farming. This is usually termed type-offarming research. The other is the more intensive study of the details of individual farm organization and operation, production

costs, and farm practice.

The broader, or type-of-farming aspect of farm-management research had its beginning, so far as the United States Department of Agriculture is concerned, with the publication in 1923 of a bulletin by the late W. J. Spillman entitled "The Distribution of Types of Farming in the United States." Though at that time the author could not attempt any close localization of specific farming types, he showed the need to do so, and broke new ground by linking physical with economic considerations. Later investigators, encouraged by a popular response to Dr. Spillman's work, followed the line indicated to such good purpose that available type-of-farming data now delineate type-of-farming areas for the whole United States on a fairly localized basis. With material furnished by the 1930 census, Federal and State agencies pushed their studies further. They have detailed type-of-farming projects either completed or under way in more than 20 States.

Nature of the Study

Type-of-farming research, besides describing accurately what the farming is in each local area, involves a study of all of the things that influence agricultural development and that determine just how farmers farm in each area and under each specific set of conditions. economic and physical. It involves the classification of farm lands, the study of agricultural markets, and of industrial conditions and business trends. It is essentially a cause-and-effect analysis in which the causes are all the conditions and forces the farmer has to deal with, and the effect is the farming which results, together with the

degree of its success or failure.

The other phase of farm-management research, equally important with type-of-farming studies in the guidance it furnishes for public efforts at improving the farmer's condition, is the study of the farm as an individual business and producing unit. In the beginning of farm-management research this was its entire scope. Through the examination of a limited number of farms, it tried to determine the essential elements of farm organization and operation leading to success. Its results had only limited application at first, because the study was not sufficiently localized and its sponsors tried to generalize too broadly from the limited conditions studied.

As such studies went forward, however, there was accumulated a vast amount of essential information contributing to the detailed understanding of farming costs, of the principles of organization and management, and of what is required to make a successful farm and to make good farming. Such understanding is indispensable in the great social task of guiding the adjustments in agriculture.

Trial and Error too Slow Just Now

Short cuts to new types of land use may not be necessary or even advisable in normal times. They are imperative just now. Trial and error are too slow. Although farm-management research tends in general to uphold prevailing farm practice, it also shows that agriculture generally lags in adjustment to changing physical or economic conditions. Delay is the rule; and delay is costly. Moreover, the more rapidly conditions change the greater is the lag in the readjustment. With readjustment going forward, so to speak, under forced draft, and yet failing to keep pace with the breakneck rapidity with which the agricultural situation changes, we must learn by realistic tests what types of farming and what systems of organization and operation seem to have the best chance in the new conditions. Research cannot eliminate risk or furnish absolute assurances of success. But it can furnish better guidance than can be had otherwise. It is a means of anticipating the lessons of individual experience.

THE SHIFT TOWARD GRASS AND FORAGE

Permanent farm recovery requires full use of the farm plant in ways that will not depress prices. Aid may come from two sources—from improvement in the demand, foreign and domestic; and from changes in the size of the agricultural plant or from a shift from such crops as corn and wheat to those like grass and forage. With the prospects of an improving demand, and with proposals to withdraw land from cultivation under adjustment contracts and through the diversion of submarginal areas to nonfarm purposes, I have dealt already. Neither from any quick improvement in the demand, nor from the withdrawal of land from agriculture, are we likely to reach quickly a point at which capacity production will be continuously profitable. Necessarily, therefore, we must consider a major shift from excess acreage of surplus crops back to the balanced condition between cultivated and grass acreages which existed before the war.

Reducing production by using land less intensively would promote efficiency; for efficiency is not synonymous with intensity in farming. Frequently, as both livestock men and field-crop growers well know, it does not pay to strive for maximum production per animal or per acre. There is a point beyond which further expense to increase output means waste. This point of diminishing returns exists for agriculture as a whole, as well as for the individual farmer. To plant high-yielding crops on every possible acre is seldom good business.

A general shift toward hay and pasture and toward soil-improving crops would have marked advantages for American agriculture just now. It would help to readjust the production of cash crops, and would at the same time reduce costs of production considering agriculture as a whole. Furthermore, it would help to prevent erosion. In other words, a broad movement toward the less inten-

sive crops would tend to increase farm incomes now and to upbuild

the agricultural plant.

Naturally, the plan cannot be put into effect to the same extent on every farm. Farmers with heavy fixed costs and with no chance to farm more acres as an offset to decreased production per acre, would have legitimate objections. Generally, however, the shift would reduce the pressure of supplies on the market, without throwing farm land totally out of use. It would advance the farm-readjustment program as a whole, with some advantage to every farmer. In order to square the general with the individual interest and to overcome difficulties on individual farms, it may be necessary to arrange for collective action under Federal guidance, in harmony with principles already familiar to the country through the A. A. A. adjustment programs. There is no reason why collective voluntary adjustment should not work as effectively in promoting a shift to grass and forage as it does in other directions.

Through benefit payments the Agricultural Adjustment Act has enabled many farmers already to increase their pasture and roughage. Further steps to that end would be facilitated should it prove practicable to place the adjustment contracts on a farm basis rather than on a commodity basis. Such a plan would apply the processingtax and benefit-payment system to the general task of getting land from cultivated crops into grass and forage, and of encouraging a shift toward a less intensive type of farming. By this means the total farm output would be held more nearly in line with the demand year after year, prices would be increased, and operating efficiency would be maintained. Making agriculture less intensive would benefit directly such major cash crops as wheat, cotton, and tobacco, and would benefit livestock and livestock products indirectly. An average acre of hay or pasture will produce only about half as much feed as an average acre of grain; but since the unit is lower, a double advantage results. Prices go up and the expenses of production go down.

A Rapid Shift Impracticable

Such a shift cannot be accomplished quickly. It involves complicated adjustments in crops and in farm organization and management. In the Northeast much of the farm land is already in hay or pasture. In the Corn Belt there is more room for the shift. Farmers there have a wide range of crops from which to choose. For permanent pasture they can use Kentucky and Canadian bluegrasses, alfalfa, and mixtures of bluegrass and such grasses as redtop, orchard grass, meadow fescue, and ryegrass. For temporary pasture they can sow Sudan grass, rye, soybeans, oats, vetch, timothy, and the clovers. Such crops as sweetclover and soybeans can be used for soil improvement. In the South the chief need is for soil-improving and erosion-preventing crops.

In the wheat-producing areas on the western edge of the Great Plains the problem is more difficult. Some of the land there can be put into Sudan grass, some into crested wheatgrass, and some into sorghums for forage. Some land can be summer-fallowed. For the most part, however, acreage retired from cultivated crops in this region should, if possible, be allowed to revert to permanent pasture. In the Palouse area of the Pacific Northwest, the hilltop land, the

fertility of which has been much depleted, should be removed from cultivation and planted to grass. Such a procedure would help to control erosion, as, indeed, the increased use of grass and forage would in most areas. Recent surveys indicate that approximately 35 million acres of formerly cultivated crop land, most of which was once very fertile, have been forced out of cultivation by erosion. From an additional area four times as large the top soil has largely disappeared. A grass cover is an economical and permanent cure

for soil erosion. In 1934 the drought and also a seed shortage prevented rapid pasture development. It would be impossible in any event, however, to do the job in a single season. This Department, in cooperation with State agricultural agencies, is conducting experiments to determine the cost of establishing pastures, and the value of hay and pasture in producing milk and meat. It has published a pasture handbook. It is also studying how to reconcile individual and group interests. Unless the shift from cash- and feed-grain production to soil-improving crops and to hay and pasture can be made profitable for the individual farmer, it will not be made. An obstacle in the past has been the desire of competitive farmers to produce as much as possible, in order to maintain their income. As a result, the individual interest clashed with the group interest. To remove this clash is the special task of the A. A. A. A considerable proportion of the land taken out of cotton and tobacco went into forage crops and feed for home use. Much of the land taken out of wheat and corn this year went into hay, pasture, and forage. These facts indicate that the

Livestock Aspects of the Problem

difficulty can be overcome.

Livestock aspects of the problem are not particularly formidable. Farmers have already reduced their hog production, and the purchase of drought-stricken beef cattle by the Government helps to adjust cattle production. A beef-cattle adjustment of broader scope is under consideration. Dairy production can be adjusted rather quickly to less intensive feeding, and poultry production likewise. It is, of course, wrong to suppose, as many nonfarmers do, that a shift from cultivated crops to grass and forage would increase the production of livestock and livestock products. True, pasture and roughage maintain animals exclusively, whereas cultivated crops produce human foods and textiles. But about 70 percent of our cultivated acreage produces livestock feed. Turning cultivated acreage over to grass and legumes would therefore reduce the total amount of animal sustenance available.

In 1919 the area used for pasture in the United States, excluding crop land pastured part of the year, was about 1,055,000,000 acres. This was 55 percent of the country's total land area. It was more than four times the area of crops used for feeding livestock. Nevertheless, the contribution of pastures to the sustenance of livestock was slightly less than the contribution of the crop land. There has not since been much change in the proportion of pasture to crop land, taking the country as a whole. But more than half the pasture is arid grassland and desert shrub land too dry for crop production. More than one-fifth is forest and cut-over land, the use of which for pasture is usually less important than its use for the production of

wood. It is not in such areas that the big opportunity exists to improve the farm situation by growing more grass and forage, but on the improved land—on the land in farms. Many farmers in all parts of the country could advantageously keep more of their land in permanent grass and legumes. They could increase the advantage by good care of pastures and by producing good quality roughage. This change will come about spontaneously to some extent. It is taking place already. Recognition of its economic soundness, possibly coupled with Government action to smooth out discrepancies between individual interest and collective interest, should forward it greatly.

More Grass Would Lessen Drudgery

There is another reason for the shift which should not be undervalued. Grassland farming takes less work than high-pressure plowland farming. Generally speaking, it provides a pleasanter farm life, with lower operating costs, less man-killing and woman-killing drudgery, and more leisure. This is as sound a business reason for the change as any of the cost-saving, price-raising features. Hustling used to be a part of the farm creed, but it can be overdone. To spare the farmer's labor, when to use it at the full means overproduction and low prices, is the most obvious common sense. In short, the considerations which make desirable a larger place for grass and forage in the farm economy touch the human as well as the monetary aspect of farming.

WILDLIFE CONSERVATION

The land-utilization program affords a long-awaited opportunity to restore and increase valuable forms of American wildlife through the establishment of an extensive system of waterfowl refuges and the improvement of environmental conditions for the birds. Millions of acres of land and water that originally produced an abundance of game, fur bearers, and fish were destroyed, so far as these resources were concerned, when subjected to unsuccessful agricultural operations. This factor has been one of the most important of all the causes that have contributed to the rapid decrease of wildlife during the past half century. The restoration of these tracts to productiveness in terms of forests and wildlife is a principal and worthy objective of the land-utilization program.

Under the restoration plan, \$8,500,000 of emergency funds has been set aside for use by the Bureau of Biological Survey for the acquisition, development, and administration of wildlife refuges. Surveys have been completed or are under way on such tracts as are situated along the principal flight lanes of the migratory wild fowl. Acquisition has already begun. Areas acquired or in process of

acquisition on August 6, 1934, include the following:

Approximate acreage	Approximate acreage
Lake Mattamuskeet, N. C	James River, N. Dak 70,000 Lake Andes, S. Dak 16,000 Medicine Lake, Mont 15,000 Turnbull Slough, Wash 5,000 Lake Malheur, Oreg 80,000 Spalding Ranch, Calif 15,000
Des Lacs, N. Dak 75,000 Mouse River, N. Dak 80,000	Upper Mississippi River Wild- life Refuge 1,000

These lands will be set aside as inviolate sanctuaries for migratory game birds. Because of their situation and character, the most valuable crop that they can produce is wildlife, and the areas will be managed for this specific purpose. Their usefulness will not be limited, however, to their effectiveness in increasing the supply of game, birds, fur bearers, and fishes, but will be reflected in benefits to agriculture and forestry and to human health and safety. The conditions most favorable to wildlife are identical with those that reduce erosion and promote flood control and soil improvement by the conservation of water resources and the production of heavy growths of vegetation for food and cover. The development of the refuge system will include the retention of higher water levels by the construction of small dams and dikes and the flooding of dry lands by diversion, employing inexpensive methods of construction. Pollution of water sources within these areas will be eliminated, and adequate fireguards will be furnished.

Scope of Wildlife Conservation

The development of wildlife as a national resource in connection with a general land-utilization plan should embrace not only national-forest, national-park, Indian-reservation, and State lands but should extend to parts of the unallotted public domain. A comprehensive system of Federal wildlife refuges contemplates including areas on the public domain that under proper administration would have a higher value for such game as mountain sheep, antelope, mule deer, and sage hens than for any other land use. On other parts of the public domain the plan contemplates control of the grazing of domestic stock, with due regard for the reasonable needs

of the native species of game.

One million dollars from emergency relief funds has been set aside by Executive order for the acquisition of migratory wild-fowl refuges. One and one-half million dollars of the funds provided for the withdrawal of submarginal lands will be devoted to the acquisition of tracts peculiarly suitable for the production of waterfowl, fishes, and fur-bearing animals. Other submarginal tracts which, while not so well adapted to aquatic life, can be developed to meet the vital requirements of upland game species will be purchased direct by the Submarginal Land Committee and turned over to the State conservation agencies for administration as wildlife sanctuaries or demonstration areas. Three and one-half million dollars of drought relief funds will be used to purchase lands adaptable for wildlife sanctuaries within the drought regions and 21/2 million dollars of Public Works funds will be available for engineering operations to restore and control water levels, to stop soil erosion, and to improve food and other environmental conditions on Federal wildlife refuges.

On March 16, 1934, the President approved the Migratory Bird Hunting Stamp Act, which provides for the issuance through post offices of a Federal hunting stamp at a fee of \$1. The stamp must be in the possession of every person over 16 years of age who hunts ducks, geese, or brant. It is estimated that the annual revenue from the sale of these stamps will be between \$600,000 and \$1,000,000, of which 90 percent will be expended by the Biological Survey in the acquisition, improvement, and maintenance of sanctuaries for migra-

tory waterfowl.

SOCIAL AND ECONOMIC ASPECTS OF FORESTRY

We solve only half the recovery problem when we stop producing surpluses. It is equally important to start producing something else. Curtailing production in certain lines without increasing it in others simply means creating more unemployment. There must be positive as well as negative readjustments; new jobs must replace old. Undoubtedly our greatest single opportunity to accomplish this end lies in forest improvement and conservation, through which we may furnish noncompetitive employment and permanent new sources of income. For much of our land forestry and agriculture are alternative uses. Fully one-third of the land in the continental United States is actual or potential forest land. There is no surplus of growing trees, but, on the contrary, an increasing need to guard against a future shortage. Forest industries can be developed to support many more people than they do at present without the slightest risk of glutting the market. Indeed, an increase in the forest uses at the expense of the agricultural uses of land would tend strongly to improve the general economic balance.

Accordingly the Department, through its Forest Service, is giving greatly increased attention to the protection, the development, and the permanent upbuilding of our forests. It is accelerating the program, not only to furnish noncompetitive employment on the land and to lighten the burden of relief but to put our timber on a sustained-yield basis—to get it handled as a crop and not as a deposit of ore. In this great enterprise three requirements stand out: (1) The acquisition of forest land by public agencies; (2) the restoration of this land to profitable timber production through fire prevention, replanting, and judicious cutting; and (3) extension of adequate fire protection to a larger proportion of private lands with recognition of the fact that private owners should cease "butchering" the timber, and should make provisions for future crops as they cut. In all three directions progress can be reported. Land acquisition by public agencies has been speeded, forest improvement has been forwarded through a public-works program, and forest industries under N. R. A. codes have assumed definite responsibilities

for maintaining the productivity of timberlands.

As is well known, the Forest Service has battled for many years against short-sighted practices in the timber industry. This country's timber industry began with enormous raw resources—with virgin stands of timber against which no one had any charges. It strove to get out the timber as quickly as possible, and never thought of restoring the growth. Founded and financed on this basis, the industry counted on a short mill life, and on quick liquidation of its investment. In all parts of the country we can see the results in sawdust piles and abandoned towns. Many forest communities that seem still to thrive are nearing the junk heap; they are taking out forest wealth much faster than it can be replaced. If they keep up their present rate of cutting, they will be finished within a few years. In an extensive western area that had 25 sawmills a quarter of a century ago, only 4 remain. There has been an enormous shrinkage in the timber crop. It is the same in the South. In one area typical of many, timber companies removed all the virgin timber, without leaving even seed trees. Fire

caused more destruction. Now the mills are gone, the county bonds are in default, and half the population is on relief.

Difficulty of Reform

Against such practices it is difficult to make headway, though the forest industries themselves recognize the need of reform. As in other phases of our economic life, the principal obstacle is unregulated competition. Left to themselves, and forced meanwhile to engage in a ruthless struggle for business, the timber companies find it impossible to think of the future. The impulse to cut without providing for regrowth outweighs the public interest in conservation. Public regulation of timber holdings is necessary, and also a fundamental readjustment in the prevailing method of financing the forest Together, these things will promote a sounder forest economy, and lead to permanent communities rather than to abandoned towns. Along with public regulation of private timber holdings should go an extension of public forest ownership; for throughout large areas the problem of forest care and improvement is such that only public agencies can deal with it effectively.

Social as well as economic considerations vest forestry with a public interest. Living in or near the national forests alone are more than three-quarters of a million people partly or wholly dependent on these forests. Forest industries create local markets for farm products, provide work off the farm, increase community advantages, and lighten the burden of taxes. Forest improvement occupies people who might otherwise engage in commercial farming or in other overcrowded work. Forest recreation and wildlife afford sources of income. Forests should be protected and improved, not only to insure the Nation a continuous and adequate supply of forest products but to furnish employment and build stable communities. Moreover, their indirect value as a source of income is enormous. The forests help to protect growing crops, to control erosion and stream flow, and to conserve water for city needs and for power,

irrigation, and navigation. Hitherto our forest resources have furnished employment mainly through exploitation—through wasteful cutting and through practices that made restocking difficult or impossible. There is a better way. Forests may still furnish materials for the lumber industry, the pulp and paper industry, and other forest industries. At the same time they may be conserved and improved as a source of future supplies by means which furnish employment now and furnish also the guaranty of increased employment in the future. It is possible to remove timber in large quantities and leave the land in a better condition to grow more timber. This is an important object of the emergency conservation program. Following the creation of the Civilian Conservation Corps, the Government put to work in the forests more than 250,000 unemployed young men and boys, many of whom had never had regular work before. They improved fireprevention facilities, abated soil erosion, combated tree pests, and improved forest conditions in other ways. Eighty percent of the work was planned and supervised by the Department's Forest Service. The social value of the enterprise, immediate and prospective, is certainly very great.

An Economic Investment

On the economic side, the work was essentially an investment. It made the forest properties more valuable. The Federal publicworks program in forestry had a counterpart in the States that have State forests. Also, the Federal Emergency Relief Administration, the Civil Works Administration, and the National Recovery Administration made funds available for the same general purpose. The Forest Service supervised a total expenditure, Federal and State, of more than \$200,000,000 for regular and emergency work in the forests. Manifold returns may be expected. Public administration of forest lands takes into account many things that private administration inevitably neglects, such as recreational values, grazing and wildlife values, erosion control, and water supplies. Forest conservation and improvement, as conducted during the last fiscal year through regular and special appropriations, works toward a coordination of forest uses, present and future, for the good of the entire Nation. It is an investment which may be relied on to produce dividends.

The Federal program of land acquisition was accelerated during the fiscal year. The Government acquired or placed under contract of sale 4,206,560 acres of privately owned forest land, as against 672,425 acres in the previous year, and a maximum of 547,925 in any earlier year. It is continuing the accelerated purchase program and preparing to establish shelter belts of planted timber throughout a hundred-mile strip of the eastern Great Plains area as a means of retaining soil moisture, checking soil erosion especially by wind, and facilitating the continued agricultural use of the land. The shelter-belt project will furnish part-time employment to many farmers.

State Participation Essential

To carry through on a national scale the measures of forest-land acquisition, reforestation, and forest improvement necessary to make the forest resources fully useful will be a prodigious long-time task. Extensive State participation is essential. The Department last year recommended an acquisition program involving both Federal and State action and placing at 224,000,000 acres the total to be acquired by public agencies within a suggested 20-year period. Since the accomplishment of this program turns partly on the willingness of the States to participate, it is obviously important to seek an understanding with each State as to the character, amount, and location of the land for which public ownership is necessary or desirable, and as to how the task involved should be apportioned. The National Resources Board and the Land Planning Division of the Agricultural Adjustment Administration are assembling data relating comprehensively to land and water use throughout the country. This study includes the whole problem of forest-land use, forest-land ownership, and the public forest-ownership program necessary to carry out a national land-use plan. State agencies are cooperating.

NEW FARM LEGISLATION

Congress at its last session passed much legislation of importance to agriculture, including amendments to the Agricultural Adjustment Act, new laws to regulate the production of cotton and of tobacco, a measure authorizing the President to negotiate reciprocal trade agreements with foreign countries, an act authorizing the creation of grazing districts out of the public domain, an amendment to the bankruptcy act granting extensions of time to distressed farmers for the payment of their debts and mortgages, and an emergency appropriation act providing, among other items,

\$525,000,000 for relief in drought-stricken areas.

Amendments to the Agricultural Adjustment Act added cattle, peanuts, barley, rye, flax, grain sorghums, sugar beets and sugarcane to the list of basic agricultural commodities. They authorized an appropriation of \$200,000,000 for dairy- and beef-cattle adjustments, and an appropriation of \$50,000,000 to buy dairy and beef products for relief distribution and to reimburse farmers for cattle destroyed in campaigns against tuberculosis and other diseases. The sugar amendments authorized a domestic production of 1,550,000 tons of sugar in the beet-sugar area and 260,000 tons of sugar in the cane-sugar area, and empowered the Secretary of Agriculture to make allotments for sugar imports. They provided also for processing taxes to finance the sugar control, and authorized the Secretary to purchase surplus sugar, not in excess of 300,000 tons. produced in the beet-sugar area and to distribute it for unemployment relief or to dispose of it in other ways consistent with the policy of the act. Still other amendments to the Agricultural Adjustment Act modified provisions relating to the processing tax.

Under the Bankhead Cotton Control Act Congress limited the amount of cotton marketable tax exempt from the 1934 crop, and provided for the collection of a tax from cotton sold in excess of the tax-exempt amount. The Kerr-Smith Tobacco Control Act applied a similar principle to tobacco and imposed a sales tax on all tobacco harvested in 1934-35 except Maryland tobacco, Virginia sun-cured

tobacco, and cigar-leaf tobacco.

Tariff Act Amended

To facilitate the expansion of foreign markets Congress amended the Tariff Act of 1930. It authorized the President, whenever he finds that any excess duties or other import restrictions of the United States or of any foreign country restrict our foreign trade unduly, to enter into trade agreements with foreign countries. These agree-

ments are not subject to Senate ratification.

By the Taylor Grazing Act Congress authorized the creation out of the public domain of grazing districts to comprise not more than 80,000,000 acres. The Secretary of the Interior is to administer these districts under a system permitting bona fide settlers, residents, and other stock owners to graze livestock. In addition the act authorized the Secretary to permit homestead entry in tracts not exceeding 320 acres within such grazing districts when it appears that the land is more valuable for cultivated crops than for native grasses.

New bankruptcy legislation for the benefit of agriculture went into effect under the Frazier-Lemke-McKeown Act. This measure nermits farmers who have not succeeded in getting their indebtedness adjusted to petition for bankruptcy and for an appraisal of their property. Appraisers appointed by the court will appraise the property "at its then fair and reasonable value, not necessarily the market value at the time of such appraisal." Then, with the consent of the lien holders, the property may be sold, in whole or in part, to the debtor on certain prescribed terms. These call for the payment of 1 percent interest upon the appraised price for the first year, and thereafter for the payment of a certain percentage of the appraised price, with interest at 1 percent on the unpaid balance, until the end of a 6-year period, when the remaining unpaid balance is due. Should the creditors reject the proposed arrangement the court must stay all proceedings for 5 years during which time the debtor may retain all or part of the property on payment of a reasonable rental. At the end of the 5 years, or earlier, the debtor may pay into court the appraised price of the property subject to reappraisal at the request of any lien holder. In the absence of such request, payment of the appraisal price will fully discharge the debtor and give him title to the property.

The Emergency Appropriation Act made available \$525,000,000 for relief in stricken agricultural areas to be allocated by the President to supplement previous emergency appropriations and for several additional purposes. Another measure authorized a \$40,000,000 appropriation to the Farm Credit Administration for crop-produc-

tion loans.

Proposed A. A. A. Amendments

Certain proposed amendments to the Agricultural Adjustment Act did not come to a vote. These related to the enforcement of marketing agreements. All the major producers' organizations, including the National Grange, the American Farm Bureau Federation, the Farmers National Grain Corporation, and the National Cooperative Council endorsed them, as likewise did the Agricultural Adjustment Administration. Their purpose was to restate in explicit terms what the administration believed to be the original intent of Congress. Misleading statements stirred up considerable opposition. Opponents charged that the amendments represented an attempt to enlarge the powers of the Agricultural Adjustment Administration and it proved impossible to smooth out controversial points before Congress adjourned. In the original Agricultural Adjustment Act Congress empowered the Secretary of Agriculture (1) to issue licenses permitting processors, associations of producers, and others to handle farm products in interstate or foreign commerce; (2) to suspend or revoke licenses for violation of the terms and conditions thereof; (3) to fine anyone handling farm products in such a manner without a license; and (4) to require licensees to furnish reports and keep suitable accounts. In attempting to enforce these provisions the Administration met with resistance. Minorities took advantage of technicalities and ambiguities in the law. They strove to prevent the enforcement of licenses and consequently to defeat the purpose of marketing agreements.

Generally it is essential to couple marketing agreements with licenses enforceable against obstructing minorities. Whatever blocks enforcement of the licenses blocks the purpose of the agreements. Accordingly the amendments in question sought to remove uncertainties in the law, and to specify more clearly the Secretary's power to enforce these marketing arrangements against the recalcitrant few. In several cases the lower Federal courts have decided the licensing powers exercised by the Secretary of Agriculture were properly exercised. Litigation and other obstruction nevertheless continued and seemed likely to increase pending a more definite

statement of the Secretary's licensing powers.

Marketing agreements covering a great variety of crops were in effect when the amendments were proposed. These agreements covered fluid milk and cream, tobacco, peanuts, rice, California deciduous-tree fruits, Northwest deciduous-tree fruits, California, Texas. and Florida citrus fruits, Flame Tokay grapes, clingstone peaches. canned and fresh asparagus, canned olives, walnuts, raisins, turpentine, and rosin. Licenses regulated the distribution of milk in many large cities. Not including increased returns to tobacco and milk producers, the benefit to farmers from marketing agreements and licenses in the 1933-34 season ran close to \$30,000,000. It would have been larger had the opposition of minorities not hampered the making and enforcement of agreements.

Opposition of Various Groups

Certain large distributors, processors, and handlers of farm products opposed the amendments. There was some opposition in Congress. The opposition contended the proposed clarification of the Secretary's powers involved an extension to him of additional powers. One objection was that the amendments would have permitted the licensing of individual farmers. Therefore the Administration proposed that a majority of producers affected by any license should have an absolute veto power over any of its provisions. One amendment would have allowed the Secretary, in making contracts with farmers for the reduction of basic crops, to stipulate that the production of nonbasic crops should not be increased. This provision, it was declared, would compel farmers to reduce their total production. No farmer, however, would have been obliged to sign any such agreement. There was nothing in the amendments to change the voluntary character of the adjustment programs. The Senate Committee on Agriculture and Forestry favorably reported the amendments, but they did not come to a vote in Congress.

GRAIN FUTURES

The Grain Futures Act should be amended and extended. present law, enacted in 1922, has served well the purpose of a preliminary measure. It has provided a broad foundation of experience upon which to base more complete regulation of the speculative markets. However, the need for amendment and enlargement of powers under the act has been apparent for many years. At the last session of Congress a bill to amend the Grain Futures Act, H. R. 9623, passed the House of Representatives but was not reported out by the Senate Committee on Agriculture and Forestry in time for Senate action before adjournment. One of the important provisions of this bill was the power given to place a limit upon purely speculative trading on the part of any one person or firm. It provided also for the licensing of commission firms accepting orders from the public and prohibited, under severe penalty, the bucketing of customers' orders, the making of wash sales and fictitious trades, and cheating and fraud

in connection with the handling of customers' orders.

There is, of course, a rather wide-spread opinion that speculation is harmful in itself and that curbing or prohibiting entirely dealings in futures would be desirable. The stubborn opposition of the exchanges to Government regulation of any kind, touching even practices which the exchanges condemn, has been largely responsible for this still growing opinion. Thus far the Department has counseled a regulatory policy, one which would preserve and strengthen the futures trading system. It has supported the view that a moderate amount of speculation in commodities gives life and liquidity to the market for such commodities and thus serves a useful economic purpose. But it cannot accept the view that in order to have those benefits it is necessary also to tolerate the evils of unregulated speculative markets, which in the long run far outweigh any possible good results.

For a late example of harmful speculation we need only go back to what happened in July 1933. Speculation in grains, induced in part, perhaps, by talk of monetary inflation, resulted in a much too rapid advance in prices during the period from June 20 to July 18. Commission houses, anxious for business, took and carried large speculative accounts without adequate margins. Large speculative lines were built up out of paper profits, and when the market finally lost its momentum there was no reserve power to sustain values. Overextended traders could not stand even a small price recession. Consequently, on July 18 and 19, wheat prices broke practically 30 cents a bushel and a serious financial crisis was averted only by the fortunate turn of circumstances.

The effect of the market crash just mentioned was to destroy entirely the morale not only of the professional speculators but of those who speculate moderately and on the basis of conservative appraisement of values. That experience so frightened the speculatively inclined that the grain markets suffered by it for a full year afterward. In this case speculation helped boost prices for a short time, but to farmers who were getting ready to harvest their crops at that time it gave only a false hope. Instead of benefiting by the price advance they reaped the inevitable fruits of overspeculation—extended market stagnation and a price dominated by fear psychology.

FOOD AND DRUG CONTROL

That the existing Federal Food and Drugs Act has sharp limitations is generally recognized, and the Department has long advocated stronger legislation. In 1933 it prepared a new food and drugs bill, which was introduced in the Senate and considered by the Senate Committee on Commerce. Two hearings resulted in material modifications of the draft. In March last the committee favorably re-

ported the revised bill (S. 2800). This measure retained most of the provisions advocated by the Department for the protection of consumers and would have controlled the traffic in food and drugs more effectively than the existing law. In addition, it would have regulated the cosmetics trade and the advertising of foods, drugs, and cosmetics. Unfortunately, the bill did not come up for passage. At the next session of Congress the Department will again request

the introduction of an adequate food and drugs bill.

The measure considered at the last session contained nothing new or startling. It simply provided means to deal with needs that have become more and more evident in recent years. Officials charged with the duty of protecting the public health have time and again recommended the essential features of the measure. Like the existing Food and Drugs Act, it would have benefited all honest manufacturers as well as consumers. Nevertheless, bitter opposition developed. The opposition came not only from interests not too scrupulous of the public welfare but from reputable manufacturers, and even from some consumers, whom misrepresentation of the bill had misled.

Under the Sherley amendment to the existing Food and Drugs Act the Government has the formidable obligation of proving that the claims made in the labeling of patent medicines are both false and fraudulent. This requirement, which the proposed bill would have changed, has been one of the most serious handicaps enforcement officials have had to meet. In one case, that of a horse liniment sold as a cure for human tuberculosis, the Government spent \$75,000 over a period of 10 years trying to get the false claims off the label. Though the first case was tried in 1922, only in March of this year was the manufacturer at last brought to book and sentenced to a fine of \$2,000. Another provision exempting any food product sold under its own distinctive name from all restrictions except those relating to the addition of poisonous or deleterious ingredients had no counterpart in the new bill.

Besides cosmetics and advertising, curative devices and contraptions, and products like the so-called "reducing agents", which are now immune, would have been brought under control. Provisions as to labels were considerably amplified to enjoin not only the truth but the whole truth, that the consumer might have sufficient information to protect both his health and his pocketbook. The bill also gave the Federal Government authority to set up a standard of quality and identity for all food products, and to establish safe tolerance for poisons in foods. As the light fines imposed under the present law seem to be regarded by some manufacturers as no more than license fees for carrying on an illegitimate, if profitable, business, the bill provided more drastic penalties, with injunctions against

chronic offenders.

Right of Self-Medication Not Denied

One false objection was that the bill denied the right of self-medication. Actually it would have made self-medication safer. It would have driven from the market drugs that are dangerous for the layman to prescribe for himself and would have permitted only such claims for home medicines as they could fulfill. Another

groundless objection was that the proposed law would have doomed advertising by insisting on the truth. This charge involves the ridiculous assumption that American business depends on dishonesty. Still another misrepresentation was that the bill would have allowed only factual advertising. The Supreme Court has definitely recognized "trade puffing" as legitimate.

False advertising should not be continued without restraint. In proportion as buying power goes for harmful things consumers have less to spend for things that are worth while and honest advertising is less effective. Honest industry should welcome an advertising standard to which its practice may profitably conform. Advertisers

can tell the truth and still do business profitably.

Opponents of the proposed food and drugs bill alleged also that it conferred czaristic power upon the Secretary of Agriculture. This allegation had mainly to do with provisions authorizing control of food and drugs traffic through licensing, where the public health could not be protected otherwise. Opponents objected likewise to a provision for the establishment of permissive supervisory inspection. Subsequently the sea-food industry requested this type of regulation for itself. It was granted through an amendment to the existing Food and Drugs Act.

Pressure of other legislative business, as well as the objection of certain interests, prevented enactment of the bill. Pending its reintroduction, the Department will continue to urge the wisdom and

necessity of its provisions.

Despite the shortcomings of the existing law, its enforcement wrought further improvement in our food and drug supply during the last year. Routine enforcement directed regulatory action against violations affecting the public health, violations involving filth or decomposition in foods, and violations resulting in economic fraud. In the last fiscal year the Food and Drug Administration reported more than 1,000 shipments of foods, drugs, and stock feeds to the Department's solicitor, as a basis for criminal prosecutions. It caused seizure actions to be directed against 1,226 consignments of foods, 435 consignments of drugs, and 24 consignments of stock feeds.

Sea-Foods Problem

A major problem is the protection of the consumer against filthy and decomposed food products. Because of their highly perishable nature, sea foods require special attention. Such products, both canned and fresh, create many occasions for seizures and prosecutions. Protection of the consumer requires the scrupulous attention of manufacturers to the character of the raw fish products, to rapid and sanitary handling, and to proper sterilization. The previously mentioned amendment to the Food and Drugs Act allows the Secretary of Agriculture, at the request of any packer of sea foods sold in interstate commerce, to inspect the product at the manufacturing plant. Manufacturers may appropriately label goods that have passed the inspection. They receive the service at cost.

Research in the Food and Drug Administration developed some new methods to reveal the presence of filth in dairy products. These methods led to the seizure last year of numerous consignments of low-grade butter of the type known as packing-stock butter. Among the seizures were some consignments of alleged creamery butter. The resulting legal actions stimulated dairy processors to improve

the methods of making and handling butter.

Another big problem is the control of poisonous spray residue. The Food and Drug Administration maintains an extensive surveillance of interstate shipments of fruit and vegetables by both truck and rail. Fruit and vegetable producers and dealers are beginning more and more to recognize the importance of spray-residue control. State authorities support the movement vigorously. In consequence the number of legal actions necessary in the last fiscal vear declined. Only 58 seizures of fruits and vegetables for excessive spray residue had to be made in 1934 as compared with 241 in the fiscal year 1933.

Liquor Adulteration and Misbranding

Prohibition repeal created new problems for the Food and Drug Administration. Under prohibition the regulation of alcoholic liquors was the task of other Government agencies. When traffic in alcoholic beverages became legal, the Food and Drug Administration had to apply to it the terms of the Food and Drugs Act. It did not receive additional appropriations for this purpose. As may easily be imagined, it would be possible to divert to this one purpose the entire appropriation for enforcing the Food and Drugs Act. Since this would be manifestly inexpedient, the administration concentrated attention on the most serious types of liquor adulteration and misbranding.

In accordance with this policy the administration made a survey of whiskies labeled as medicinal. It caused actions to be instituted against brands not up to the requirements of the United States Pharmacopæia and not clearly labeled to show their deviation from that standard. Misbranding of beverage whisky amounting to definite misrepresentation prompts administrative action. However, the character of the liquor traffic obviously makes special legislation necessary. Many types of liquor adulteration and misbranding can-

not be proved, or even detected, by chemical analysis.

Among the byproducts of prohibition repeal are candies containing alcohol in liquid centers. Such articles are vicious, particularly in view of their consumption by children. Confections containing alcoholic, spirituous, and vinous liquor have been held illegal under the Food and Drugs Act from the beginning. They do not become legal simply through the repeal of prohibition. Purveyors generally bootleg these preparations. It is difficult to track down and establish the interstate character of the shipments. Nevertheless, the administration seized 18 consignments and practically drove liquor candies out of interstate commerce.

RESEARCH

Research is the Department's biggest job; indeed, research is the foundation of everything it does. It could not help farmers to plan their production, to reduce their costs, to fight the diseases and pests that attack animals and plants, to produce better crops and livestock, and to market their products efficiently, without first studying

how these things may be done.

Yet some persons believe there is a conflict between agricultural research and the need to adjust agricultural production. Agricultural science enables farmers to increase crop yields per acre, and to increase the output of meat and milk per unit of feed consumed. How, it is asked, can this be reconciled with the present necessity to

restrict certain kinds of farm production?

The contradiction is unreal. When farm production exceeds the demand, it should be reduced not by discarding science, but by planting fewer acres or raising fewer animals. There is no advantage in allowing costs per unit of production to increase, as would be the result of giving science a holiday. By letting pests and diseases ravage their crops, and by harvesting inefficiently what remained, farmers could doubtless reduce their output, and raise the prices of farm commodities. But they would increase their unit costs of production out of all proportion to any conceivable gain in prices, and would produce goods of low quality.

It is therefore wrong to say that agricultural research should be curtailed when crop adjustments are in order. In fact, the need for research is greater then. The character of the work should perhaps be somewhat changed. The crisis through which American agriculture is passing gives a new direction to agricultural research and a new importance to certain kinds. Especially it emphasizes the worth

of investigations having an immediate social application.

In shaping its research to meet the emergency, the Department has kept this principle firmly in mind. It has strengthened various studies promising wide social benefit, not only to farmers but to other economic groups. Examples are the economic investigations that furnish a basis for crop adjustments; the soil surveys and land classifications that influence subsistence homesteading, forestry, erosion control, and wildlife conservation; and diet studies that serve to guide public agencies in dispensing relief. We need technical progress in the distribution as well as in the production of wealth. Research devoted to that end joins economic science to production science without detracting at all from the value of the latter. It produces benefits that cannot easily be monopolized. Much research of this kind we have had, of course, for a long time. As we move away from ruthless competition toward efficient social cooperation, the scope and the need for it increase.

Social Value of Emergency Studies

Many studies made possible during the last year through emergency appropriations have outstanding social value. This Department gathered facts of tremendous national significance in a study of tax delinquency, which indicated the extent, the character, and the causes of the trouble. Results of this investigation may profoundly influence Federal and State policy in reallocating land to better uses. Emergency funds facilitated animal- and plant-disease control and work on problems created by the drought. Emergency funds also aided research as well as action against bovine tuberculosis, Bang's disease, tick fever, endemic typhus, white pine blister

rust, infestations of grasshoppers and chinch bugs, Dutch elm disease,

and other scourges.

Special appropriations from Congress and grants from N. R. A., P. W. A., and C. W. A. financed statistical and economic studies, a farm-housing survey, and numerous miscellaneous activities. This Department furnished technical help to numerous Government agencies, in connection with unemployment relief, subsistence farming, work in the Tennessee Valley under T. V. A., code making and enforcement by the N. R. A., land planning by the National Resources Board, and tariff negotiations by the State Department. Investigations went forward looking to the solution of the sprayresidue problem, the increased utilization of farm byproducts, the better adaptation of farm implements to farm needs, the breeding of drought-resistant agricultural plants, and the development of

grasses suited to dry areas.

The Department cooperated extensively with the State experiment stations. The cooperative studies included surveys of soil resources in practically every representative agricultural area in the country; soil use and conservation; prevention of soil losses through erosion; establishment of superior types of farming; improvement of irrigation practices; more efficient and economical use of fertilizers; improvement of corn and other cereal crops, and of cotton grades and prices; breeding of potatoes resistant to disease; development and establishment of type varieties of vegetables; use of parasites to combat the oriental fruit moth; survey of plant diseases; increasing the efficiency of oil sprays for combating insect pests; improvement of conditions of livestock production, marketing, and meat utilization, and of the quality and palatability of meat; determining the relation of the conformation and anatomy of the dairy cow to productive ability; development of beefiness and milk production in dual-purpose cattle; use of proved sires in breeding for high milk and butterfat production; prevention and eradication of Bang's disease of cattle; establishment of a farm real estate tax index, and the use of land for grass and forage.

Federal Funds for Experiment Stations

The Secretary of Agriculture is charged by law with the responsibility of administering the Hatch, Adams, Purnell, and supplementary acts appropriating Federal funds for the support of the State agricultural experiment stations and of those maintained in Alaska, Hawaii, and Puerto Rico, and of coordinating the work of the Department with that of the stations. The funds so administered amounted to \$4,439,130 during the year ended June 30, 1934—\$90,000 to each State, \$15,000 to Alaska, \$62,270 to Hawaii, and \$41,860 to Puerto Rico, out of a total of approximately \$14,775,000 available to these stations from all sources. The funds were used for the prosecution of about 6,000 research projects, having as their primary object the betterment of farming and the rural home. About 800 of the projects were carried on in cooperation with the Department of Agriculture. The Office of Experiment Stations represents the Secretary of Agriculture in administering the Federal funds for the stations.

GENETICS

Probably no single factor in the research program in the Department is more important than what we have come to call the search for "superior germ plasm." Briefly, this consists of the discovery and development of superior seed stock through applications of the art of breeding and the principles of genetics. Such superior material then becomes available for use by producers of grain and livestock, as well as to the scientists and practical breeders for further improvement.

The isolation of strains having superior germ plasm is of tremendous value in efficient production. Superior germ plasm helps the farmer, not only to produce more per unit, but also to produce plants and animals of better quality and greater usefulness. In the plant field much has already been accomplished in this respect and although progress has been much slower and less spectacular in the animal field, many of the principles of inheritance are being applied in the development of new and superior strains.

A recent exhibition displayed about 150 superior new varieties of field crops. By the use of three chief breeding principles (introduction, selection, and hybridization) plant breeders have developed hundreds of new varieties which are high-yielding, disease- and insect-resistant, of high quality, and superior in many ways to the

ordinary varieties.

New, superior varieties of wheat, such as Turkey, Marquis, Kanred, Ceres, Federation, Tenmarq, Ridit, and Oro; varieties of oats, such as Iogold, Albion (Iowa 103), and Markton; and varieties of barley, such as Hannchen, Trebi, and Gladron, to mention only a few, are now cultivated on more than 40 millions of acres of crop land each Apples of higher color and quality and strawberries adapted to canning and freezing are now available. Melons and peas resistant to wilt have been developed. Potatoes, such as the Katahdin, which is resistant to some of the baffling virus diseases, have been developed by Department plant breeders.

Progress With Livestock

In the case of the larger animals, livestock improvement involves such a long-time, expensive program that it is impractical to raise experimentally the large populations which are necessary for efficient progress. Nevertheless, the fundamental principles of inheritance are essentially the same in the animal as in the plant kingdom. It has been clearly established that genetic factors concerned with disease resistance, growth, body size, performance, and fecundity can be obtained in relatively homozygous conditions by application of the proper system of breeding and selection. Through introductions of the proper animal material and application of the correct breeding system, it is not only possible to concentrate important hereditary factors in strains of domestic livestock but this is already being accomplished.

For instance, one outstanding achievement in cattle breeding is the development of the Santa Gertrudis strain of cattle by practical cattle breeders in Texas. The Department has under way a similar program in which the Brahman and Aberdeen-Angus breeds of cattle

are being crossed for the purpose of combining certain desirable characteristics in homozygous condition. A similar experiment is being carried on simultaneously in which the imported Africander cattle are being crossed with the Aberdeen-Angus for a similar

purpose.

By combining the Rambouillet and Lincoln breeds of sheep the Department has developed a strain, known as the "Columbia type" sheep, which is particularly adapted to the conditions found in the Northwest intermountain region. The Department is also experimenting with combinations of Southdown and Corriedale breeds of sheep for the purpose of producing more efficient and true-breeding strains of sheep for hothouse lamb production. Recently the Department imported 24 Landrace and 6 Yorkshire hogs from Denmark for use in the development of superior strains of hogs. An important part of the improvement program with cattle, sheep, and swine consists of record-of-performance tests, in which efficiency of feed utilization and quality of animal products are evaluated.

For the last 15 years the Department has followed a constructive breeding program in its dairy herds, using sires that possess a high degree of genetic purity for the factors that determine high milk production as indicated by the production performance of their daughters. By concentrating the superior germ plasm of such sires it is making progress toward the development of strains of cattle that will be pure in their inheritance and transmitting ability for a

high level of milk production.

In poultry, Department workers have demonstrated that first-year egg production is determined largely by four heritable characters, sexual maturity, rate of laying, absence of broodiness, and persistence of production. By the proper selection of breeding stock, based on the progeny test, it is possible to develop superior laying strains that are comparatively homozygous. For the past decade poultry breeders in several States have been carrying on record-of-performance work on their own premises, with the object of identifying superior sires and dams and perpetuating superior strains of laying stock. The various State rules and regulations governing the poultry record-of-performance work are standardized through an unofficial organization known as the "United States Record-of-Performance Federation."

Interbureau Committee on Genetics

No conservation of natural resources can mean more to posterity than the production of strains of plants and animals relatively homozygous for efficient production of high quality. The Department of Agriculture is devoting itself to the long-time job of developing strains of this type. An interbureau committee is taking an inventory of the Department's genetic accomplishments, preparatory to further intensive research, and preparing to catalog, for the use of scientists and farmers generally, the superior strains of plant and animal breeding stock now available.

PROGRESS IN PLANT BREEDING

Research designed to increase the efficiency, stability, and quality of crop production has proceeded along the same general lines as in previous years, but on a scale reduced to meet the drastic cuts in

appropriations for this purpose. In spite of the reduced support, the plant scientists of the Department have continued to make notable contributions to a more efficient agriculture and thereby to the gen-

eral welfare of all of the people, urban and rural.

When the results of plant improvement are measured in terms of acre yield, the larger average yield over a period of years frequently is due more to preventing ruinously low yields in occasional years than to raising the general level of yield. Thus the improvement tends to stabilize production and to permit more definite planning. Stem rust long has taken its toll from the Nation's wheat crop. The disease is not equal in severity in different years, but may be either negligible or devastating in its effect on susceptible varieties. The breeding of more resistant varieties by the Department in cooperation with the State experiment stations has reduced markedly, though not eliminated, the hazard of rust damage from wheat growing in the northern Great Plains, by providing Ceres, Thatcher, and other resistant sorts. Similar advances have been made in reducing the hazards due to winter-killing and smut injury.

Developments in oat breeding tend to stabilize the acre yields of that crop. Losses due to crown rust, stem rust, and the loose and covered smuts of oats have been severe in some seasons. Varieties already have been developed that are resistant to one or more of these diseases. More recently, strains have been obtained through hybridization and selection that are resistant to all four. It remains to determine by adequate field trials that these new strains have no serious unrecognized faults before they will be ready for distri-

bution.

Plant improvement rarely is devoted to the sole purpose of increasing yield. Quality is equally important. Rust and smut decrease both the yield and the quality of wheat, and the gains in quality from the development of resistant sorts are frequently more important than the gains in yield alone. A few years ago practically all of the wheat from some of the shipping stations in the Pacific Northwest was very smutty, with consequent heavy dockage and a very low price. With the use of such smut-resistant varieties as Ridit, Albit, and Oro in these areas, most of the wheat now coming from

the same stations is smut-free and without penalty.

Progress in developing better strains of corn by selection and crossing has been continued. Larger yield is not the only objective. The corn breeder strives to develop hybrids that stand up better in storms and produce a smaller proportion of unsound low-grading grain. During the past year it was discovered that strains of corn differ markedly with respect to the constitution of their starch. In some the percentage of amylose, the valuable constituent, was as high as 93 percent, and in others as low as 63 percent. This fact provides a basis for breeding varieties of much greater value to the starch industries than any now existing.

New Varieties of Fruits

Improved varieties or practices making for a better quality of product are even more important with fruit and vegetable crops than with field crops. Through breeding and selection the Department recently has produced a number of varieties of strawberries

having special merits as to quality and adaptation. The Dorsett and Fairfax, introduced in 1932, have unusually high dessert qualities. Others are the Blakemore, excellent as a preserving berry; the Bellmar, a berry of good quality that ships well; and the Southland, which is especially adapted to southern latitudes and has high merit

for the home garden.

Losses due to alfalfa wilt are not alone those apparent in lower yields from year to year. Without this disease, the life of established fields would be materially longer. Growers would save on costs of reseeding and would avoid losses incident to the more frequent establishment of new fields. Foundation stocks of alfalfa that are vigorous and wilt resistant have been isolated by self-fertilization and selection, an important step toward the control of alfalfa wilt.

New fruit, vegetable, and field crops introduced by the Department constitute a valuable element of our present agriculture. The introduction of Korean lespedeza, introduced in 1921, has been extended to more than 5,000,000 acres with gratifying results. This legume has shown ability to withstand unfavorable conditions of various kinds. Even during the severe heat and drought in 1934 it maintained itself in Missouri and provided a little grazing when other crops failed.

The Department has obtained varieties of soybeans adapted to areas for which varieties previously were not available. Earlier maturing strains found among the Department's extensive recent introductions from abroad will permit utilizing this valuable crop farther north than heretofore. One of these, the Cayuga, may be counted on to mature in much of New York during any normal season. Its value as a home-grown source of protein for the exten-

sive dairy industry in that State has been demonstrated.

The development of a variety resistant to some disease or insect pest may permit continued production of a particular crop in a locality that otherwise would have to make expensive shifts in farm practice or even be abandoned for agriculture. The success of the Department some years ago in rehabilitating sugarcane growing in Louisiana and the other Gulf States by the introduction of mosaic-resistant varieties is well known. This has maintained a production worth more than \$20,000,000 annually, and conserved investments

in mills and special equipment of more than \$100,000,000.

Through further importations and breeding, other resistant varieties have been obtained possessing characteristics which adapt them to special conditions of soil, harvest, and the like. During the present year two new varieties of sugarcane having additional superior characteristics, C. P. 28/11 and C. P. 28/19, were released by the Department for general culture. The problem does not stop here however. During recent months a new form of the mosaic has been found in commercial fields of hitherto resistant varieties of cane. This calls for immediate steps looking to the finding and breeding of varieties resistant to the new menace as well as the old.

Influence of Light on Germination

Results that may have importance with lettuce breeding and production have just been obtained in studies of the influence of light on the germination of lettuce seed. Lettuce seed has a period of

dormancy following maturity, during which it will not germinate under ordinary conditions. Thus, seed produced in the regular lettuce-seed sections of northern California is harvested in August and cannot be used for early planting the same fall in the Imperial Valley. It has just been determined, however, that some kinds of lettuce seed, if soaked and exposed for a few minutes to daylight, will germinate immediately. The experiments have not gone far enough to predict whether this treatment will be useful in connection with commercial lettuce production. It is almost certain, however, to be of value to lettuce breeders in shortening the time between generations.

It is not always possible to breed a variety resistant to some disease, and other methods of control must be developed. Recent investigations in controlling tobacco mildew or the blue-mold disease have produced important results. In repeated experiments excellent control was obtained in 1934 by maintaining the tobacco beds at night temperatures of above 70° F. during periods favorable for disease activity. It appears to be unnecessary to begin heating to maintain temperatures until after the disease is evident, and relatively crude methods of heating can be used. This discovery will materially reduce the cost of obtaining stands of tobacco without

significantly increasing final production.

The Department's investigations with the apple, peach, and orange have shown clearly that the removal from the tree of part of the crop early in the season results in much higher quality and size of those fruits left. The larger leaf area per fruit after the thinning makes available more carbohydrates and other elaborated foods per fruit, resulting in increased size and sugar content. Peaches and apples develop a brighter color over a greater proportion of their surfaces. Biennial bearing varieties of apples tend to produce annual crops if the fruit thinning is severe enough that sufficient foliage is available not only for developing the crop but for forming fruit buds in addition. All of these research results are being put into profitable practice.

DAIRY INVESTIGATIONS

As a result of the Department's progress in developing pure-lineproduction herds and in spreading genetic knowledge, farmers and breeders are becoming more and more interested in obtaining proved sires to head their dairy herds. At present the number of proved sires is very limited, but the breeding work has demonstrated that the sons of proved sires can be used with greater assurance that they will transmit higher production than the sons of untried bulls. As a part of the Department's breeding experiments, all young sons of proved sires are placed in neighboring farm herds to be proved. The 505 daughters of 52 young Holstein-Friesian bulls loaned to farmers near the Huntley, Mont., station have production records that exceed their dams' records by an average of 1,601 pounds of milk and 69 pounds of butterfat. The 145 daughters of 16 young Jersey bulls loaned from the Beltsville, Md., herd have records that exceed their dams' records by an average of 817 pounds of milk and 56 pounds of butterfat.

Criteria for Judging Cattle

Investigators in the Department are studying the relation between the outward conformation and the size of the internal organs and body parts, and the relation between both conformation and internal anatomy and producing capacity, for the purpose of providing a scientific basis for judging. They have found marked variations in the size of the internal organs of animals of similar conformation. For example, little relation exists between width of chest and size of heart and lungs, whereas the depth of chest is rather definitely correlated with the size of these organs; size of heart is rather closely correlated with body size, body circumferences, and body depths but less closely with height, widths, and lengths of body; lung weight is more highly correlated with lengths and depths of body than with other body measurements; and length of intestines is more closely correlated with body size, weight, and body depths than with other body measurements.

Milk secretion has been shown to be a continuous process except as it is interfered with by fright, pain, or internal pressure due to accumulation of milk in the udder. Moreover, it has been found that practically all of the milk obtained at a milking is in the udder when the milking process commenced rather than being secreted during the brief period of milking. The discovery led to experimental work which has shown that incomplete milking does not cause udder troubles nor tend to dry off cows quicker. This information may lead to the discontinuance of the laborious chore of stripping after

machine milking.

Dairymen have long been urged to grow and feed more roughage, as a practical means of cutting feed cost of milk production. Recent investigations in the Department indicate that it is important to use good quality roughage, especially roughage with a high vitamin A activity, because of its beneficial effect on the general health and reproductive functions of dairy cows, and also on the nutritive value of their milk. Many premature births are caused by vitamin A deficiency, a condition that might be avoided by proper attention to the quality of the roughage fed. In seasons of exceptionally dry pastures this deficiency is likely to be aggravated, and may call for supplemental feeding with cod-liver oil, carrots, or other feeds rich in vitamin A.

Feeding experiments have shown that roughage is more nutritious and more palatable when cut in the earlier stages of maturity than when allowed to ripen before cutting, and the immature cuttings yield more protein per acre. Furthermore, at field stations cows have produced 75 percent as much butterfat on good roughage alone as they produced when fed heavily on grain with roughage. This information indicates that dairy farming, in many instances, would be more profitable if the farmer devoted all or most of his land to pasture and forage crops, and fed grain only when the prices of butterfat and the additional yield warranted the purchase of grain. Such a "back to grass" program would not only put the individual dairy farmer on a more permanently profitable basis, but would tend to retard production of a surplus of dairy products.

THE PAST YEAR IN AGRICULTURE

Miscellaneous Dairy Studies

Ice-cream studies in the last year have resulted in the development of a method by which the density of ice cream can be increased to any desired point by pressing to remove the air. The Department has perfected a method for merchandising natural cheddar cheese in small, attractive, consumer-size packages. Such packages should have wide-spread consumer appeal and should stimulate consumption. The process consists essentially in sealing the freshly made curd in valve-equipped cans, in which normal ripening takes place, and in which the cheese is also retailed to the consumer. Such a package may carry the name of the cheese maker direct to the consumer and should encourage manufacturers to make a high-grade product. Several companies have started packaging cheddar cheese in this way. Tests made of methods and materials for wrapping swiss cheese when it is cut for distribution to the retail trade indicate that it is possible to wrap the cheese so that it may be held for about 2 weeks without molding or noticeable loss of moisture, depending on the temperature at which the cheese is held. Dairy scientists this year developed a suitable package for merchandizing skim-milk powder in small consumer-size units. Making skim-milk solids available to the average household should increase the sales of this valuable product for use in home cookery.

ANIMAL INDUSTRY PROBLEMS

Early in 1934 Federal funds for the eradication of bovine tuberculosis became available through the Civil Works Administration. Several States assigned additional veterinarians to the work which was conducted under the joint supervision of Federal and State authorities. Local men assisted the veterinarians. During the few months that the C. W. A. project was in operation, approximately 1,000,000 cattle were tuberculin-tested in eight States. This completed the tuberculin-testing of cattle in many counties, and placed these counties in the modified-accredited area; that is, in the area in which the prevalence of the disease has been reduced to less than 0.5 percent. For this project the Civil Works Administration provided approximately \$170,000.

Certain amounts later provided in the La Follette amendment to the Jones-Connally Cattle Act were allotted to the Bureau of Animal Industry to further the eradication of tuberculosis and of Bang's

disease or infectious abortion.

Bang's disease exists in practically all localities where cattle are handled. It is a serious menace. In cooperation with the States, the Department proceeded with eradication work. The project provides for the payment of a Federal indemnity for cattle that react to the disease. Participation is voluntary on the part of the cattle owner, but if he participates he must agree not only to the testing of his cattle but also to the management of his herd to prevent reinfection.

The maximum Federal payment for grade cattle reacting to the Bang's disease test is \$20. For purebred registered cattle it is \$50. Up to the date of this report no State except Virginia has made an

indemnity payment. Virginia has made a limited appropriation for the purpose. The owner of reacting animals receives the net salvage in addition to the Federal payment, though he may not receive more than the appraised value of the animals. Approximately \$17,000,000 has been tentatively allotted for the Bang's-disease project. The appropriation is available until the end of the calendar year 1935.

In connection with the enforcement of the Packers' and Stockyards' Act, a Federal statutory court upheld an order prescribing reasonable rates to be charged by the stockyard company in Omaha, Nebr., and the rates were put into effect. The estimated saving to farmers who use the Omaha livestock market is about \$100,000 annually. The Secretary of Agriculture also issued orders prescribing charges at the stockyards in St. Joseph, Mo., and commission rates at the livestock market in Chicago, Ill. Federal courts temporarily restrained the enforcement of these orders. Pending a decision on these cases, the courts have required the stockyards and market agencies affected to set aside funds representing the difference between existing rates and the rates ordered. In the event that the cases are decided in favor of the Government, the impounded funds will be distributed to the shippers. The savings to farmers, if the orders are upheld, will be about \$700,000 annually.

In livestock research record-of-performance studies with cattle and swine continued to demonstrate the wide variations which exist in the breeding efficiency and production efficiency of animals of similar ancestry. For example, there was a difference of nearly 5 months in the time it took beef steers of the same breed to reach finished weights of 900 pounds. Also calves that were heaviest at birth made the most rapid growth, required less feed per 100 pounds of gain up to weaning age, and reached final slaughter weights in the shortest time. However, no relationship was found between the weight of the calves at birth and the carcass grade they attained. In tests of dual-purpose bulls of similar breeding, individual sires differed widely in the transmission of the ability to produce beef efficiently. Similar wide

variations in performance were found also with swine.

Meat Investigations

Meat investigations conducted by the Department in cooperation with State experiment stations and other organizations furnished important information on the factors which influence the quality and palatability of meat. The high value of good pasture for meat production was again demonstrated in a cooperative study with the Tennessee Agricultural Experiment Station. Lamb produced on good pasture and ewe's milk was equal in finish and palatability to lamb produced under similar conditions, but with the addition of grain to the ration. With fattened hogs, as the final feed-lot weight and finish increased between 145 and 225 pounds, the cooked meat showed a gradual though small improvement in tenderness, in the flavor of lean, and in the quality of the juice. When hogs were carried to heavier weights and greater finish there was a decline in these characteristics or no further improvement.

Veterinary Congress

Coming to the United States for the first time in the 71 years of its existence, the International Veterinary Congress held its twelfth convention in New York City August 13–18, 1934. John R. Mohler, Chief of the Bureau of Animal Industry, was elected president. An outcome of the convention was a movement toward increased international cooperation in research and in the dissemination of research results. The veterinary congress discussed the inspection of meat and milk, and manifested special interest in measures for the protection of consumers.

INSECT PESTS

Unusual weather over much of the country during the last year was favorable for certain insect pests. Many species which normally occur only in limited numbers became abundant and did material damage. In some sections, however, such as the northeastern part of the United States, certain common species were less abundant than usual. Buffalo gnats or black flies occurred in outbreak numbers in parts of the lower Mississippi Valley and caused material losses to livestock and poultry. The green bug, the corn flea beetle, the introduced sawfly which injures wheat and related grains, the pea aphid, and the San Jose scale occurred in outbreak numbers in various regions. The mild winter was favorable to the overwintering stage of the codling moth. The drought in the Middle and Far West favored the increase of grasshoppers and chinch bugs.

That excessive numbers of grasshoppers would occur over a large part of the north-central region was demonstrated by surveys in 1933, which indicated that certain species which migrate long distances would occur in large numbers unless natural causes intervened. To aid in protecting crops in infested areas, Congress appropriated \$2,354,893 and authorized the Department to furnish materials for bait to States willing to organize and finance local campaigns. Many States organized campaigns which were very successful, though in drought-stricken areas crop damage from drought obscured the

results.

Excessively large numbers of chinch bugs entered hibernation in the fall of 1933. The mild winter favored their overwintering. They emerged from hibernation and entered the small-grain fields much earlier than usual. This attack caused excessive losses in Iowa, Kansas, Nebraska, Illinois, Indiana, and Missouri. Unusual measures were necessary to protect young corn from the first generation of bugs, which migrated into the corn as the small grains dried

up from drought or were harvested.

Congress appropriated \$1,000,000 to purchase materials for the construction of barriers to prevent the bugs from migrating into young corn, and authorized the Department to cooperate with States that would undertake to receive, distribute, and bear the expense of handling and utilizing the materials. In limited sections the first-generation bugs had left the small grains and moved into corn before the cooperative effort to prevent damage by the first generation was under way. Over the area as a whole, however, the control campaign was markedly successful.

Mosquito-Control Campaigns

The Department cooperated in extensive campaigns to control pest and salt-marsh mosquitoes. In cooperation with the Civil Works Administration, it organized campaigns to control pest mosquitoes This work cost approximately \$1,726,940 and furnished in 33 States. more than 2,805,000 man-hours of employment. The campaigns resulted in material benefit, and received general endorsement. Many communities undertook to maintain the ditches and other devices constructed as a part of the control operations. In many States and localities the work was continued or expanded when the Federal Civil Works projects were discontinued. Besides reducing the annoyance and dangers caused by mosquitoes, the campaigns demonstrated the practicability of mosquito-control operations during the winter. In certain sections along the Atlantic coast it was practical to couple mosquito control with reduction of the number of sand flies, which are a serious pest there.

With the aid of labor supplied through the Civilian Conservation Corps and other emergency agencies, the Department made progress in controlling outbreaks of bark beetles, which are a menace to important forests trees, particularly in the West. It conducted surveys to determine areas where control might be effectively undertaken and to furnish estimates of the cost. In California 22 C. C. camps did work to control the bark beetles between July 1, 1933, and April 1, 1934. The benefit should be great and lasting. As evidence of the value of such campaigns, it may be noted that during 1934 only 13 infested trees were located in the Crater Lake National Park. When control operations were undertaken there in 1932, it was necessary to treat more than 20,000 infested trees. Similar results have been obtained in many other sections. Even small projects, as, for example, one conducted in the Kootenai National Forest, have preserved valuable stands of western white pine.

A serious outbreak of the Dutch elm disease, which has caused wide-spread destruction of susceptible elms in western Europe during the past 16 years, was disclosed in parts of New Jersey, New York, and Connecticut, and in the vicinity of New York Harbor. The disease was first discovered in this area in June 1933. Last fall and winter scouts located some 1,500 diseased trees scattered over approximately 1,400 square miles. An unexpectedly rapid development of the disease took place at the beginning of the growing season in 1934. Infected trees began to show serious wilting by May 20, and within a month many diseased trees were dead or dying. By the end of June, 3,255 such trees had been found in the States, as follows: New Jersey, 2,012; New York, 1,235; and Connecticut, 8; and up to July 31, 6,500 diseased trees were known to be infected. The above conditions are attributed to the growth of overwintering infections which developed rapidly in the new current season's sapwood.

Bark Beetles Transfer Elm Disease

Work in Europe and preliminary studies in the United States indicated that certain bark beetles transfer the disease from tree to tree. Entomologists in the Department are studying the habits and distribution of these insects. There is no known cure for a diseased tree. The removal and burning of affected trees is the only practical

method of preventing the spread of the disease. This has been done as rapidly as possible with the State and Federal funds available. The unexpectedly large number of infected trees made it impossible, however, to do all the eradication necessary. Eradication of the disease appears to be practicable, but the scope of the work must be enlarged. Delay will increase the eventual cost. The disease was located at three other points—at Cleveland and Cincinnati, Ohio, in 1930, and at Baltimore, Md., in 1933. But at these points the European elm bark beetles apparently were not established. Eradication of the diseased trees appears to have been effective in these cases.

Spreading through Mexico, the Mexican fruit fly reached the northern border of that country some years ago and was first found in the lower Rio Grande Valley of Texas in 1927. It has persisted in that area in small numbers, despite efforts made by the State and Federal Governments and by the growers to eliminate it and to prevent reinfestation from Mexico. Suppression measures, consisting of the maintenance of a host-free period and the spraying of

groves in which flies were found, have been continued.

Japanese Beetle at St. Louis. Mo.

The most important extension of the range of the Japanese beetle discovered in recent years is an outbreak in St. Louis, Mo. The insect was first picked up there by Boy Scouts in 1932. Several additional beetles were found in 1933, but information concerning the matter did not reach the Department until the spring of 1934. The infested area was something over 1 square mile. This is the first infestation of this size occurring west of Pennsylvania, although a few beetles have been taken in traps at intervening points, usually along railway lines. Officials of the Missouri State Department of Agriculture and of the city of St. Louis are anxious to suppress this infestation, and have made available their somewhat limited resources and equipment for eradication work.

CHEMISTRY AND SOIL INVESTIGATIONS

The protection of agricultural products and equipment against the destructive action of insects, micro-organisms, fire, and other agencies is one of the Department's major activities. Losses to American agriculture from these various causes are conservatively estimated to

exceed \$2,000,000,000 annually.

Work upon rotenone has led to a vast increase in the use of this new insecticide. During the past year 500,000 pounds of derris root was imported for manufacture into rotenone-bearing dusts, extracts fly sprays, etc. The high toxicity of rotenone-containing products to such insects as the cabbage worm, and their harmlessness to mar and animals, adapt them for use as insecticides upon vegetables More than 300,000 pounds of derris dust was employed during the past season on cauliflower alone.

Domestic sources of rotenone, such as the common weed known as

"Devil's shoestring" (*Cracca virginiana*), are being surveyed.

A harmless means has been discovered for preventing the objectionable darkening of sliced fruit and vegetables without the use of sulphur dioxide, the presence of which in excessive quantities has caused the rejection by several foreign countries of certain American exported products. The commercial development of this new

process is expected to be of great benefit to agriculture.

Farm fires in the United States in 1933 caused damage exceeding \$100,000,000 and resulted in the loss of approximately 3,500 lives. American agriculture can ill afford this heavy "fire tax", which for the entire United States amounts to an average of about \$16 per This excessive drain is being alleviated through the Department's introduction of safety codes, by published instructions on the prevention and control of farm fires, and by an active educational campaign in cooperation with 4-H clubs and other organizations. By the adoption of the Department's recommendations, there has been a marked reduction in calamities of this description.

An additional hazard in the case of industries handling grain. flour, starch, sugar, cattle feeds, food products, insecticides, fertilizers, and other agricultural products is that of dust explosions. In the last 17 years (1917–33) there have been more than 360 dust explosions of this character in which 281 persons were killed, 624 injured, and an estimated \$31,530,850 worth of property destroyed. The Department, cooperating with insurance companies and other protective agencies, has greatly reduced the number and violence of these accidents, with a considerable saving in life and property.

The Department developed a process for making a fine quality of white starch from cull and surplus sweetpotatoes. This led to an authorization by the Federal Emergency Relief Administration of funds not to exceed \$150,000 for the construction and operation of a

cooperative sweetpotato-starch plant at Laurel, Miss.

Beverages from Cull and Surplus Fruit

Among other recent important developments may be mentioned the Department's improvement of methods of manufacturing potable juices, wines, cordials, and other beverages from cull and surplus fruits, a chemical study of the soybean in order to determine what varieties are best suited for oil and cattle-food production, and the application of the ethylene treatment for improving the quality of walnut meats (a new development which in the past year has

increased the value of this crop to producers by over \$100,000).

For developing new methods for making useful products from straw, cornstalks, hulls, and other so-called "agricultural wastes", the Department is conducting investigations in cooperation with the Iowa State College. A new laboratory building which is being erected at Ames, Iowa, for this purpose with P. W. A. funds, will be equipped with the latest apparatus for producing illuminating gas, chemicals, and other byproducts from farm wastes by destructive distillation, fermentation, and other treatments. The utilization of these cellular wastes for paper, fiber board, and other promising commodities is being investigated. The problems are being studied from the viewpoint of the economic conditions in each agricultural Results of this work will help farmers to derive a profit from organic refuse which in many instances is now entirely wasted.

The Department recently discovered methods for fireproofing fabrics which will permit the employment of cotton cloth for awnings in many cities where this is not permitted by present fire-protective

regulations. Similarly its work on the development of improved vat dyes of greater fastness to light will extend the use of cotton goods. The Department's production of gluconic acid and other valuable organic chemicals by the mold fermentation of corn sugar is another illustration of how chemical research can widen the market for agricultural products.

Results of Fertilizer Studies

Fertilizer work done by the Department for the past 20 years has helped to develop a nitrogen industry adequate to meet the country's requirements for peace-time industry and for national defense, to foster a domestic potash industry which guarantees the United States against future shortage and foreign monopoly, to improve the production of phosphate and mixed fertilizer, and to save the American farmer more than \$30,000,000 annually.

An idea of the extent to which the farmer has profited as a result of reduced costs of fertilizers may be gained from a comparison of the costs per unit of plant food in various materials shown in table 1.

Table 1.—Average spot prices per unit of 20 pounds of plant food in various materials at producing points, in stated years

Material	Plant food	1920	1925	1930	1933
Sodium nitrate	Nitrogen	\$4. 44 4. 08 3. 40 8. 38 8. 02 8. 97 9. 48 1. 22 2. 41	\$3. 28 2. 65 1. 75 2. 20 3. 98 5. 33 4. 53 5. 69 . 68	\$2.49 1.79 1.40 1.65 3.78 4.95 4.27 5.01	\$1. 53 1. 12 1. 15 1. 13 2. 02 2. 88 2. 63 2. 71 . 70

That the American potash industry has become so firmly established as to free this country from foreign control was demonstrated by its initiation this year of a series of price reductions which brought the cost of muriate of potash to the lowest price at which it had ever been quoted in this country, namely, 35.2 cents per unit of potash.

The utilization of synthetic ammonia in its application to the fabrication of new nitrogenous fertilizers has been studied with a view to the elaboration of substitutes for the high-priced organic ingredients and to promote the use of nitric acid in fertilizer manufacture.

The blast-furnace smelting of natural phosphate rock as developed by this Department yields the element, phosphorus, freed from its combinations, as a convenient material for distribution and fabrication into a series of fertilizer compounds. The Department's equipment and personnel applied to this important research has been transferred to the Tennessee Valley Authority to constitute a part of that agency's fertilizer-production program. Collateral researches involving smaller expenditures continue in the Department.

The application of this new technology to the vast phosphate deposits of the Rocky Mountain States appears to be the most feasible method of placing those deposits at the service of the farmers of the

Midwestern and Western States. Utilization of these deposits would

furnish much employment.

The Department continues to seek the elimination of the less valuable, with increased concentration of the more valuable, constituents of prepared fertilizers. Results to date, with a 40-percent increase in plant-food content, represent a proportionate decrease in distribution and handling charges amounting to an annual saving of several million dollars.

The Soil Survey

During the past fiscal year the Soil Survey mapped approximately 24,000 square miles of rural lands in 26 States and Puerto Rico. This brought the total area covered to more than 1½ million square miles, or something over one-half of the nonmountainous land of the Nation. In addition the Soil Survey aided other Government agencies in dealing with problems of land use, reclamation, and farm credit. The maps of the Soil Survey furnish a basis for developing policies of land use. With the accompanying reports, these maps provide working handbooks which describe conditions of climate, vegetation, physiography, geology, and drainage, and indicate the possible uses and productivity of particular areas.

In recent years the Soil Survey Division has cooperated with the North Dakota Agricultural Experiment Station in surveying the western counties of North Dakota for a classification of rural lands for tax assessments. Other States, especially Washington, plan a similar land classification. Appraisers for the Federal land banks use the soil maps. In areas surveyed recently the land appraisers rely almost exclusively on the soil survey. Organizations responsible for the determination of land use, the zoning of rural lands, the appraisal of farm lands, the purchase of lands for farms or forests, and the location of reclamation projects depend on the Soil Survey

maps and reports.

Soil Erosion

It is imperative to emphasize the serious problem of soil erosion. Inattention to the progressive devastation of great areas by the uncontrolled action of wind and water already has cost the Nation many billions. In terms of our national life and welfare, the loss cannot be expressed in dollars and cents. The Department has made progress in both the research and the extension phases of erosion control at its erosion control experiment stations. The remarkable effectiveness of vegetation in holding the soil in place has been measured in numerous ways under a wide variety of conditions. Associated studies have dealt with the comparative influence of different crops, the effects of cultivation, the value and action of organic matter in the soil, the make-up and arrangement of crop rotations, etc. The same cultivated crop may provoke remarkably different degrees of erosion in different rotations, depending on definite factors in the character and sequence of the other crops.

New and promising possibilities are developing through the combination of the vegetation factor with terracing, contour cultivation, and other mechanical types of control, especially under conditions of land use and slope where either alone may prove inadequate. Most

promise under a rather wide range of conditions appears to lie in

such combinations of methods.

Tests at the erosion experiment farms continue to demonstrate that terracing is the most effective single means of controlling soil erosion on cultivated land. It is particularly effective on land devoted to such crops as corn and cotton. Supplementing the terraces with contour plowing and the use of soil-saving and soil-building crops gives the best results. The experience of the Civilian Conservation Corps in gully control showed that for lands suitable only for pasture or forest, masonry or concrete structures are too costly. For such lands, less permanent dams of brush and logs or rock are practical.

EXTENSION AND INFORMATION WORK

All phases of the Department's traditional job of diffusing useful information on subjects connected with agriculture took on new meaning and vitality during the year. Through extension activities, press and radio releases, and through official publications the Department forwarded the crop-adjustment programs, and kept farmers and others in touch with technical progress in agricultural economics, in plant and animal science, in disease and pest control, in home economics, and in many other subjects of practical importance. It dealt comprehensively with all phases of the drought problem, from the meteorological aspects to the economic and social effects immediate and prospective. It specially emphasized the importance of erosion control and soil building through the increased use of pasture and forage, a course which has the additional great advantage of harmonizing with the crop-adjustment programs. Research and technical progress do not conflict with the need to readjust production, as many farmers and others mistakenly suppose; and the Department took pains to make this clear through various informational channels.

With the passage of the Agricultural Adjustment Act, the Extension Service became the spearhead of the adjustment campaigns. State extension workers and county agricultural agents in most of the States devoted much of their time to the organization and training of county and community crop-adjustment committees, and to holding meetings of farmers to explain the need for production control and the provisions of the production-control contracts. They assisted farmers in executing contracts, supervised the measuring of fields to determine compliance, distributed checks for benefit and acreage-rental payments, and handled many other details involved in the contracts. Extension agents held nearly 75,000 meetings of farmers during the year in connection with production-control campaigns.

Extension workers everywhere assisted relief agencies, both in planning relief activities, and in suggesting to farm families means of increasing their incomes and keeping off relief rolls. Homedemonstration agents organized and directed home-gardening and food-preservation projects, supervised community-canning plants, and made suggestions regarding low-cost foods to maintain satisfactory dietary standards. Extension nutrition workers in a number of States served as advisers to State relief administrations on food problems.

The drought brought many new duties to extension workers. Local arrangements for the appraisal and purchase of several million

cattle and sheep in the drought area by the Agricultural Adjustment Administration were, for the most part, in the hands of extension agents. Extension directors generally served as State drought directors and county agricultural agents as county drought directors. State drought directors assigned purchase quotas of cattle and sheep to counties, and county agents, with the assistance of the county drought service committees, arranged for the listing of livestock for purchase. Extension agents advised farmers regarding the conservation of feed supplies, the planting and use of emergency forage crops, the planting of emergency gardens, and many other means of lessening the ravages of the drought.

Boys and Girls 4-H Clubs

Both agricultural and home demonstration agents found time to continue in large measure one of the most important of extension activities, the 4-H boys' and girls' clubs. Enrollment in 4-H clubs and completion of projects by club members in 1933 reached practically the 1932 figures, and preliminary estimates for 1934 indicate

that there has been little falling off in club work.

With the additional personnel employed as emergency agricultural agents and in other capacities through allotments of funds by the Agricultural Adjustment Administration, and with assistance given by the relief administration in some States in the employment of home demonstration agents, the extension staff now consists of a larger force of trained workers than at any previous time. On June 30, 1934, the total was 6,549, of whom 3,344 were agricultural agents and assistant agents in counties, and 1,387 were county home demonstration agents and assistants.

FARM HOUSING

With funds provided by the Civil Works Administration, the Department conducted a farm-housing survey as part of the farm-recovery program. The inconvenience of farmhouses, the absence of comforts which are taken as a matter of course in the city, and the wide-spread lack of even simple facilities for safeguarding health are well known. Years of economic depression have intensified these conditions and lowered the standard of living among farm people. An improvement in rural housing would benefit the entire Nation. It would raise the rural living standard, furnish employment in many industries, and quicken trade in both town and country.

The survey covered farmhouses representative of conditions the country over. Its purpose was threefold: (1) To obtain definite facts and figures on rural-housing needs from the men and women occupants; (2) to work out plans and specifications for building new low-cost rural houses, and for making repairs and improvements on houses now standing; and (3) to suggest methods of financing that would aid in rural improvement and national economic recovery.

As an immediate relief measure the project gave employment to nearly 5,000 persons, among them about 4,500 women. The personnel included women trained in home economics, agricultural engineers and architects, and persons with statistical, clerical, and field experience. Bureaus of the Department cooperated with State

extension services in the survey.

The field staff visited more than 600,000 farm homes in 352 counties in 46 States and obtained information regarding water supply and sewage disposal, light and heat, refrigeration, laundry, and cooking facilities, and on new installations and construction and acceptable methods of financing. An engineer in each county obtained data on needed repairs, and worked up a schedule of unit costs after

interviewing local dealers, contractors, and farmers.

The survey indicated that probably 50 percent of our rural homes are in good structural condition. They may be poorly arranged, and may lack modern conveniences, but at least the houses are reasonably sound. On the other hand, some 15 percent of the houses need new foundations; between 15 and 20 percent need new roofs; 10 to 15 percent need new floors; and about 10 percent need extensive repairs or replacement of exterior walls. Between the extremes of houses in good condition and those needing complete replacement of some part or all of the house is a large group needing extensive repairs of some kind, including refinishing inside and painting outside.

Prospects for Farm Building

The survey indicated that 250,000 farmers hope to build new houses within the next 3 years, and that a much larger number wish to remodel their houses and add modern conveniences when their incomes permit. To assist farm people in planning improvements the Bureaus of Agricultural Engineering and Home Economics cooperated with 20 of the State agricultural colleges and the Civil Works Administration in preparing designs for well-arranged low-cost farmhouses. Forty of these plans have been published in a farmers' bulletin entitled "Farmhouse Plans." Working drawings to be used by carpenters in building these houses were made available through the extension services of the State agricultural colleges.

Studies were made of kitchen arrangement, storage units, and farmhouse remodeling. Suggestions are being prepared for remodeling old houses and making repairs. Specifications were prepared for plumbing and heating equipment suitable for farm use. The survey stimulated a renewed interest in home improvement. There is an increasing demand for material on all phases of the subject. The survey showed that a large number of farm people want electric service. Accordingly, investigators studied present electric service facilities, desirable extensions of transmission lines, and uses for electricity on farms. Other phases of the survey provided information on rural hospital and library facilities. In short, it furnished much basic information needed in planning for improved living conditions on farms.

Lack of Conveniences on the Farm

The survey revealed an extreme lack of home comforts and conveniences on the farm. Some of the causes were obvious. Rural communities find it difficult to cooperate in supplying utilities such as water supply and sewage disposal. Rural electrification is costly. Moreover, farm people frequently do things in laborious ways after

easier methods have been discovered. In far too many instances the farmhouse provides only meager facilities for sheltering and feeding the farm family. It contributes little toward making homelife pleasant. Heretofore farm savings have largely gone back into the farm to increase production. It would be sound economy to put an increased proportion into the home. Such a course, besides raising the farm standard of living, would harmonize with the need for controlling production.

WEATHER STUDIES

During the past year the Weather Bureau took steps to utilize the results of recent studies and investigations in forecasting. This action was prompted, in part, by recommendations contained in a report by a committee of the Science Advisory Board. The committee was created by Executive order on July 31, 1933, for the purpose of cooperating with the Federal Government in the handling of problems in which science is involved. A special committee on the Weather Bureau consisted of Robert A. Millikan, director, Normal Bridge Laboratory of Physics and chairman of the executive council, California Institute of Technology, Pasadena, Calif., chairman; Isaiah Bowman, chairman National Research Council, director, American Geographical Society, New York City; Karl T. Compton, president Massachusetts Institute of Technology, Cambridge, Mass.; and Charles D. Reed, senior meteorologist in charge, Weather Bureau section center, Des Moines, Iowa. The committee's report was published in December 1933, was approved in January 1934, and action to carry out its recommendations has been proceeding since that time.

The most important recommendation related to the development of forecasting on the basis of what is known as "air-mass analysis." Briefly stated, air-mass analysis consists of a detailed study of masses of air of decidedly different structure as to temperature, moisture, and wind that meet along an irregular line variously referred to as a "discontinuity line", "polar front", "wind shift", etc. These masses of air, cold and dry from polar regions, warm and humid from equatorial, do not readily mix but tend to preserve their individual identities, the warm, moist air being forced to rise above and flow over the denser cold air, with resulting condensation and precipitation and other attendant phenomena which give us most of the

stormy weather characteristic of temperate latitudes.

The chief requisites for the application of air-mass analysis to forecasting are (1) personnel qualified by training and experience in this school of thought; (2) daily reports of temperature, humidity, and other conditions up to 3 or 4 miles above the earth's surface at a large number of places well distributed over the country; and (3) more frequent and more detailed reports of surface conditions, including observations at sea.

In carrying out the first objective a special nonassembled civilservice examination has been announced for the purpose of bringing into the Bureau several well-qualified men who have specialized in forecasting based on air-mass analysis. The introduction of this method will require probably from 3 to 5 years, during which period the personnel of the Bureau, already experienced in forecasting, will

be given additional training along the newer lines.

The second part of the program, namely, securing upper-air observations of temperature, humidity, etc., has been put into effect to the extent that this is possible at the present time. This has been accomplished through cooperation with the War and Navy Departments. In all, 20 airplane stations are now in operation, 7 each by those two Departments and 6 by the Weather Bureau. These are quite well distributed over the country. Daily flights are made to heights of about 17,000 feet and the data are at once transmitted by the teletype system of the Bureau of Air Commerce. The organization of this net work of upper-air stations constitutes the most important step in the development of the air-mass analysis program. The data will be of great value in theoretical studies as well as in the more practical work of forecasting.

Under existing conditions not much can be done in putting into effect the third objective, namely, securing more frequent and more detailed observations of surface conditions, both on the land and at sea. However, a definite program has been worked out for adoption as soon as practicable. It provides for 4 daily weather maps instead of 2 and for more precise information regarding cloud types, character of precipitation, pressure changes, and other elements. The data will be reported in accordance with a system of codes and units that has been adopted for international use, thus assuring comparable

reports from all countries.

Problems of Forecasting

Generally speaking, there has been comparatively little progress in forecasting for many years. It is confidently believed that, through the greater employment of modern working tools such as radio and the airplane, which will give us essential data in the vertical as well as in the horizontal, we now stand on the threshold of an era of real progress, which will provide forecasts more accurate, more specific, and covering somewhat greater periods in advance

than have been possible up to the present time.

With funds allotted for the purpose by the Civil Works Administration this Department studied the frequencies at which excessive rainfall for short periods has occurred in different parts of the Results of this study should have numerous important practical applications. They have a bearing on the planning of terracing systems, on farm-drainage systems carrying surface water, on the construction of culvert-waterway openings for small watersheds, and on the need for municipal storm-water sewers and other structures for carrying run-off water. Knowledge of the frequencies with which different rates of precipitation recur will enable engineers to determine the maximum rates against which run-off structures should give protection. The study assembled data relating to excessive precipitations at 208 Weather Bureau stations. The investigators derived formulas to represent the maximum rates of precipitation for periods up to 400 minutes. They prepared charts showing the frequency, the duration, and the season of various precipitations. It should now be possible to predict with reasonable accuracy the probable frequency of short-duration precipitations of any given intensity in any part of the United States. Storms along the Gulf of Mexico and the Atlantic seaboard are of much greater intensity than storms inland east of the one hundredth meridian. West of that meridian storms are of less intensity and frequency than farther east.

ROAD CONSTRUCTION

To provide for emergency construction of public highways and related projects, the National Industrial Recovery Act authorized the President to make grants to the several State highway departments in an amount not less than \$400,000,000 to be expended on sections of the Federal-aid highway system, extensions of the Federal-aid system into and through municipalities, and secondary or feeder roads to be agreed upon by the State highway departments and the Secretary of Agriculture. An additional amount not less than \$50,000,000 was authorized for the construction of roads in the national forests and parks, in Indian reservations, and through public lands.

Under the latter authorization, \$25,000,000 was allotted to this Department for the construction of roads in the national forests, and \$5,000,000 was made available and apportioned among States having more than 5 percent of their area in public lands for construction of roads through such lands under the joint supervision of the Department and the several State highway departments. For the expenditure of these sums and the \$400,000,000 allotted for construction on the Federal-aid system and secondary roads, the Department has been directly responsible. Under special agreements the Bureau of Public Roads has also supervised the design and construction of roads in the national parks and loan-and-grant projects approved by the Public Works Administration.

Increase of employment was the primary purpose of these allotments, and the results in that respect have been satisfactory. Measured in man-months, the employment afforded by road construction work, under the supervision of the Department, in the fiscal year 1934, was almost as great as the total for the 2 preceding years.

As shown by table 2, employment provided during the past year totaled 2,185,259 man-months, which may be compared with 908,271 man-months in the fiscal year 1932 and 1,352,626 in 1933. The 1934 employment varied from a minimum of 111,307 men in August 1933 to a maximum of 344,421 in June 1934, with an average monthly employment of 182,105 men.

Table 2.—Comparison of employment during fiscal years 1932, 1933, and 1934 on all Federal and Federal-aid highway and forest road and trail construction, and on all Federal and State road work, including State maintenance operations, by months

Month	Men employed on all Federal, Federal-aid highway, and forest road and trail construction			Total men employed on all Federal and State highway and forest road and trail construction and main- tenance		
	1932	1933	1934	1932	1933	1934
July	156, 874 120, 289 92, 039 64, 693 37, 293 30, 583 27, 637 29, 017 43, 728	Man- months 83, 795 92, 426 126, 346 128, 324 134, 360 101, 284 78, 153 80, 881 126, 419 144, 591 157, 463	Man- months 129, 205 111, 307 118, 555 160, 190 193, 613 182, 004 159, 304 162, 332 149, 474 194, 554 280, 300 344, 421 2, 185, 259	Man- months 391, 285 395, 405 380, 806 383, 274 291, 543 246, 273 230, 254 219, 182 212, 588 247, 366 261, 721 283, 224 3, 472, 891	Man- months 308, 125 336, 483 378, 558 377, 604 293, 478 269, 098 257, 922 282, 093 304, 045 334, 845 334, 792 3, 883, 050	Man- months 332, 277 329, 909 341, 481 390, 203 390, 203 427, 822 389, 677 321, 139 311, 608 301, 686 362, 175 474, 832 553, 020 4, 505, 829

These figures represent continuous employment—not individuals employed. By reason of the limitation of hours per week the number of individuals benefited is greater than the above figures indicate, the monthly average being about 261,000 persons. The figures represent direct employment only. The manufacture and transportation of materials and equipment employed an additional large number of men, estimated at 1.4 times the direct employment, or, for the year, approximately 3,059,300 man-months, making the total estimated employment, direct and indirect, during the year approximately 5,245,000 man-months.

The table gives details of the direct continuous employment by months in the fiscal years 1932, 1933, and 1934, on all Federal and Federal-aid road work supervised by the Department in comparison with the corresponding employment afforded by all Federal and State road construction and maintenance work. It will be noted that the employment provided by the Federal road work increased from approximately one-fourth of the total State and Federal employment in 1932 to nearly one-half of the total in the fiscal year 1934.

Distribution of Road-Building Employment

To distribute the road-building employment as widely as practicable the rules and regulations, issued by the Department with the approval of the Special Board for Public Works, required that projects be located in at least 75 percent of all counties in each State. In the course of the year projects were actually initiated in 2,649 of the 3,074 counties of the United States, or 86 percent. In harmony with the requirements for other Public Works projects, the regulations also limited the working time of each individual to 30 hours per week, subject to exceptions consistent with the nature of the work; provided for the establishment of minimum wage rates by the several State highway departments, and stipulated certain

reasonable preferences to apply in the employment of labor secured through local employment agencies designated by the United States Employment Service. Provision was also made to give effect to the purpose of the act to use a maximum of human labor in lieu of machinery wherever practicable and consistent with sound economy

and public advantage.

In addition to funds provided by the National Industrial Recovery Act there were available for road building at the beginning of the fiscal year unexpended balances of previous appropriations for Federal-aid and emergency road construction and for forest and public-lands highways, for which this Department is directly responsible, in the amount of \$133,271,408. With the \$424,000,000 made available by the National Industrial Recovery Act for construction of Federal-aid, national-forest, public-lands, and secondary highways, the total available for expenditure at the beginning of the year was \$557,271,408.

Expenditures for Road Construction

Expenditures on the various classes of work for which the above sums were available amounted during the year to approximately \$243,821,700, including \$42,291,900 of Federal-aid funds, \$55,669,100 of emergency construction funds appropriated by the act of July 21, 1932, \$123,754,300 of public-works funds appropriated by section 204 of the National Industrial Recovery Act, \$12,744,300 of several funds available for forest-highway construction, \$7,064,600 for forest truck trails and trails, and \$2,297,500 from funds available for the construction of roads through public lands. The expenditure reported does not include \$35,275,000 disbursed to State highway departments in advance payment for work authorized by section 204 of the National Industrial Recovery Act, or expenditures made by States for work completed on public-works projects, probably exceeding \$100,000,000, for which reimbursement had not been made by the Federal Government on June 30. Nor do the reported expenditures include any sums paid for work done on national-park highways under the engineering supervision of the Bureau of Public Roads or for loan-andgrant highway projects approved by the Public Works Administration and also placed under the supervision of the Bureau of Public Roads.

Construction work on projects of various classes, covering 23,150 miles of road, 12,080 miles of truck tracks, and 2,525 miles of trails, was completed during the fiscal year; including 14,780 miles improved with Federal-aid and emergency-construction funds, 6,986 miles built with funds appropriated by section 204 of the National Industrial Recovery Act, 1,099 miles of forest highways, 12,080 miles of truck trails, and 2,525 miles of trails, and 285 miles of publiclands highways. The total cost of the completed projects was \$340,963,082, exclusive of the emergency conservation funds.

At the close of the year the current program involved improvement of an additional 18,298 miles in all classes of projects, including 2,324 miles to be paid for with regular Federal-aid, State, and emergency-construction funds, 15,392 miles financed with section 204 funds, 1,646 miles of forest-highway projects, and 579 miles of public-lands highways, 1,700 miles of truck trails, and 1,300 miles of

trails. The estimated cost of these projects is \$510,384,274. The

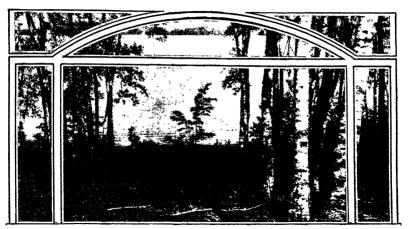
above does not include contemplated work of the C. C. C.

These mileages and costs of projects completed and in progress do not include national-park road projects or loan-and-grant projects approved by the Public Works Administration on which the construction work is supervised by the Bureau of Public Roads. Nor do they include work-relief projects in progress, involving nearly 7,800 miles of road on which labor is supplied and paid by the Federal Emergency Relief Administration and other costs paid with Public Works funds.

CHANGES IN DEPARTMENT'S ORGANIZATION

Some important changes were made during the year in the organization of the Department. The position of Under Secretary of Agriculture was created. The position of Director of Scientific Work was discontinued. An Office of Budget and Finance was created, with a director in charge. The Bureau of Entomology and the Plant Quarantine and Control Administration were merged into a Bureau of Entomology and Plant Quarantine. To this were transferred several units in the Bureau of Plant Industry which deal with the control and prevention of the spread of plant diseases. Charles L. Marlatt, Chief of the Bureau of Entomology, retired after 44 years of service; William A. Taylor, Chief of the Bureau of Plant Industry, after 42 years of service; Beverly T. Galloway, principal pathologist and formerly Chief of the Bureau of Plant Industry, after 46 years of service; and James A. Evans, associate chief, Office of Cooperative Extension Work, after 29 years of service.

HENRY A. WALLACE, Secretary of Agriculture.



WHAT'S NEW IN AGRICULTURE

ADJUSTMENT Program for Longer Future Requires Careful Land Planning

With the launching of the New Deal in 1933, a many-sided program was set in motion by the Administration. Some parts of

the program dealt with the immediate emergency, while others looked to the longer future. The interrelationships between the various parts, however, have not always been clearly understood. Probably no other phase of the program has given rise to more confusion than that of land use.

Should farmers with fertile crop land continue to keep a portion of it out of production, or should the adjustment be made by the elimination of production on the submarginal land? Should we not concentrate on increasing foreign outlets for our agricultural products instead of adjusting production at home? What place should there be for subsistence homesteads on the land? These are some of the questions

in the minds of thoughtful persons.

The major consideration in the problem of land use is the necessity of maintaining a balance between the productive capacity of our land and the market outlets, under conditions of farming which will conserve rather than deplete our land resources. In approaching this problem, the first thing to determine is how many acres we need to farm. means we must take into consideration the amount of farm products we are selling and expect to sell abroad, the amount we import, and the amount which will be consumed domestically. To arrive at definite figures is not easy, because we are dealing with a number of vari-Take the matter of exports, for example. The Government, under the Reciprocal Tariff Act passed by Congress, is now attempting to revive a two-way foreign trade that will make it possible for us to sell a greater amount of farm products abroad. But since the progress that can be made in this direction depends in part on conditions in the rest of the world, no one can say just how much we can expand our foreign markets for farm products, nor how soon.

When we examine consumption at home, we find that in the predepression period from 1925 to 1929, the amount of land used to produce food for the population of the United States, computed in terms of the present population of 125 million people, was 287 million acres. In 1932-33, however, the depression had reduced the standard of living so that the number of acres used for domestic food consumption was only 281 million. In that period, nonfood crops consumed at home accounted for 30 million acres, and 44 million acres were used producing crops for export. This made a total of 354 million acres in use for food and nonfood crops.

Land Requirements for Different Diets

As we have explored the possibilities of keeping a maximum of farm land in use through increased consumer incomes and an improved standard of living, we have worked out estimates of the land required to supply the products called for by four scientifically balanced diets at different levels of nutritive content and cost. Now the number of acres needed to sustain our population on the basis of the first or cheapest diet is far less than on the basis of the fourth one. The subsistence level of the first diet requires only 180 million productive acres, while the second diet calls for 226 million, the third 280 million,

and the fourth, or liberal diet, would take 335 million acres.

Our present level of domestic consumption calls for an acreage which approximates that required by the third diet, described as adequate, at moderate cost. The fact that the more liberal diet would require the utilization of some 55 million acres of producing farm land above our present requirements indicates to what extent greater domestic purchasing power and changed dietary habits could solve our agricultural-adjustment problem. However, the present outlook for achieving the level of the fourth diet is none too rosy. The problem of stepping up consumer purchasing power from the present level is itself a tremendous one.

Several Permanent Solutions Possible

The important thing to remember is that there are several possible solutions of a permanent nature, any or all of which may be applied to our problem of restoring a balance in agriculture. One is to shrink the size of the plant, a second is to increase our foreign outlets, and a third is to raise the domestic standard of living so that more acres will be used to feed our people at home. Still another is to continue the shift, already begun, from an intensive to an extensive type of farming.

The Administration is attacking the problem from all these directions at once. The Agricultural Adjustment Administration is collaborating with the Federal Emergency Relief Administration and the Department of Interior in the type of approach which involves the purchase of submarginal land and its removal from cultivation. The acquisition of this land naturally proceeds very slowly, but there is no reason why material progress cannot be made over a period of 5 or 10 years. There are worth-while social as well as practical reasons for this approach to the problem. To help farmers make a start on better soil is a justifiable objective. Also, compact resettlement around established communities should reduce the exorbitant costs to local and State governments for maintaining roads, schools, and other public services for scattered agricultural settlements. Finally, much of

the land not suited for agriculture has great value to society for recre-

ational and other uses, including wildlife conservation.

Meanwhile, if foreign trade revives, through such measures as the Reciprocal Tariff Act, and if other measures and events increase domestic purchasing power, there is a good chance that expansion of acreage to supply increased demands may eventually meet the shrinkage in total plant brought about by the land-acquisition program. Progress in each of these three directions is not likely to be spectacular, and yet in time it may be sufficient to correct the maladjustment

under which agriculture has been laboring in recent years.

Not all the land taken out of production will have to be acquired by the Federal Government outright. Undoubtedly much can be accomplished in cooperation with the States. Farm lands which return to State ownership as a result of nonpayment of taxes may be kept out of production. Many States, too, may find that the method of rural zoning, as practiced for example by Wisconsin, may prove useful in discouraging settlement on uneconomic or isolated lands, particularly when surrounded by forest and recreational areas. third indirect method of influencing land use is the purchase of ease-This may be helpful as one means of making it worth while for farmers to check serious soil erosion, or of directing land settlement away from areas unsuitable for agriculture.

Relocating Farm Families

The program of land acquisition inevitably raises the question: What is to become of the thousands of farm families now living on the land to be acquired? The people affected fall into several main categories. (1) There are those who will be able to find work where they are, in the forest reserves, game preserves, parks, and so on which are set up by the Federal or State governments. (2) There are the families who will take care of themselves, either moving to town or to another piece of land. Often the people have a little nest egg saved up, which together with the modest sum paid them for their land, will enable them to make a fresh start somewhere else. (3) There are those who will need help or rehabilitation. (4) There are the people who would be willing to sell, provided that they can continue to live on their land the rest of their lives. In many cases it may be consistent with the objectives of this program to purchase the land subject to this privilege.

When we consider the problem of rehabilitating rural families, we find that there are other groups who desire some means of self-help on There are stranded industrial families in the cities and in areas where the exhaustion of natural resources, such as coal or timber. has eliminated the prospect of employment. There are also the farmbred people who would normally have gone to the cities, but who are now, because of reduced industrial activity, forced to remain in the

country.

The establishment of "rural-industrial communities" has been proposed as a constructive remedy for the conditions just described. Federal Emergency Relief Administration is cooperating with the States in setting up such communities, which are intended to provide home sites and tracts of land for stranded families, where products may be raised for home use. Likewise it is intended to make part-time occupations, such as the production of handicraft goods, available for the earning of supplementary income. Eventually it is hoped that a

decentralization of industry may bring permanent employment to such communities

Crop Adjustments Well Along

The program of land use and the related one of community building necessarily look to the longer future. Progress made in these directions, along with general recovery and revival of foreign trade, will lessen the need for severely restrictive adjustment of production on good land. Already the emergency phase of adjustment is passing into the long-time phase. Instead of making drastic reduction in crop acreage, as was necessary in 1933, farmers now need merely so to shape their plans that cultivated acreage will not increase too much. We are witnessing a shift in the usage of fertile land from an intensive to an extensive type of farming, with increased acreages of pasture, forage, soil-improvement crops, game refuges, and wood lots. This change is desirable not only to gain the proper economic balance, but as a means of better livestock feeding and of conserving soil fertility. Such a shift is itself a significant move in the direction of better use of our land resources.

H. R. Tolley, Agricultural Adjustment Administration.

GRICULTURE Should Study The agricultural-adjustment pro-Possible Alternatives to gram for the major export prod-Processing-Tax System ucts has been made possible largely through funds derived

from processing taxes. As a result of the excessive world supplies, the farm prices of wheat, corn, hogs, cotton, and tobacco were far below their normal relation to other prices at the time the Agricultural Adiustment Act was passed. The large American supply available for export prevented tariffs, where present, from maintaining the domestic The processing tax closed up part or all the gap between world market prices and the normal parity with commodities that farmers buy. Domestic consumers thus paid a normal price for their products, in part through the market price and the remaining part through tax payments. These tax payments covered disbursements of benefit payments to farmers who cooperated in production control, and thus made it possible to carry through the program of adjusting production.

Obviously, as supplies are better adjusted to demand, and as demand itself improves, the market price of the basic commodities will tend to rise toward the parity level. Under the Agricultural Adjustment Act the Secretary might find it necessary to adjust the taxes downward from time to time as prices rise toward parity. If prices exceed parity, and remain above parity for a sufficient length of time, the fact might justify the complete removal of the tax. Under these conditions, what device should be substituted if agricultural adjustment is to be continued? The act itself, in the statement of objective, says the purpose is: "To establish and maintain such balance between production and consumption of agricultural products" (as will give farmers parity prices). This indicates that it is intended not only to restore, but to maintain balanced market conditions.

The processing tax may tend to prevent prices of some commodities from reaching parity. The amount spent by the consumer for hogs, including the processing tax, appears to be determined by the supply and demand conditions. If supply is adjusted to such a point that the consumer will just pay a parity price for it, the continuation of a heavy tax would divert part of that amount for benefit payments, and leave the market price at a lower level. Under such circumstances, a processing tax would penalize noncooperators who attempted to increase production, and would insure to cooperating farmers the full parity income. Continued corn and hog adjustment would thus be made possible.

In the case of some other products, such as wheat or cotton, the tax appears to be largely added to the amount paid by consumers. After a normal balance between supply and demand had been restored, the tax would therefore not tend to depress the price received among non-cooperating farmers, but would tend to raise costs to consumers above parity levels which would be contrary to the declared purpose of the

act.

Various Alternatives Mentioned

The problem must be faced of developing methods of continuing production adjustment even after processing taxes on some products have to be eliminated in whole or in part. A number of possible alternatives have been suggested. Seven have been enumerated by the Secretary of Agriculture. The first two involve continuing to secure farmers' cooperation in production adjustment by making benefit payments to them, but raising the necessary money either (1) by means of a general sales tax or (2) by means of higher income taxes. Another plan. (3) is compulsory production control, through the taxation of farmers who produce in excess of their allotted quotas, along the general lines of the Bankhead Cotton Act and the Kerr-Smith Tobacco Act. Other proposals are: (4) Use a combination of stabilization purchases and loans to farmers on commodities in years of large crops and low prices. (5) Drop production control, but limit the quantity marketed for domestic use at higher prices, while permitting unlimited marketing for export at the world market price. Eliminate production control by restoring foreign buying power by loans abroad of approximately half a billion dollars a year. (7) Eliminate production control and restore foreign buying power by reducing tariffs sufficiently to create a net excess of imports of at least one-half billion dollars a year.

Difficulties in General Taxation

The first two methods involve general taxation for agricultural adjustment. It seems doubtful whether the general public would be willing to continue permanently a system of benefit payments to farmers for adjusting production in their own interests at the expense of the general taxpayer, even though that adjustment contributed to general economic stability. Several of the other proposals have even more obvious difficulties. The fifth plan, the two-price system with marketing control, besides involving serious administrative difficulties, would encourage the expansion of production, and force exports into world markets not prepared to take them.

The sixth proposal, to lend foreign purchasers each year the money to take continued heavy imports, though it was the method followed for years prior to 1929, is not sound. It could be only a temporary

palliative, and would mean giving away most of the exports.

These eliminations brings us back to plans 3, 4, and 7. Plan 4 is somewhat along the line of the "ever-normal granary." Without accompanying control of production, however, purchases of supplies in large crop years cannot correct the surplus problem, as the Farm Board learned. Storage programs are desirable along with production adjustment, but they do not provide a satisfactory substitute. The Secretary's annual report, pages 1 to 109 of this volume, and the chapter on Smoothing Out the Cycles, in the book, New Frontiers, by Secretary Wallace, discuss the economics of the "ever-normal granary."

The Compulsory Control of Production

This leaves compulsory control of production as under the Bankhead Act, or adequate expansion of foreign buying power, as the two remaining possibilities. To a certain extent both plans might have to be followed in the future. We are now experimenting, through the trade-agreement program, to see how far our imports can be increased through concessions to other countries. If we continue along this line long enough, it may expand exports sufficiently to ease the

problem of surplus acreage.

Compulsory control is not an attractive method for continuously adjusting production. Farmers may become restive under direct control as the economic conditions which were responsible for it gradually fade from memory. Some alternative voluntary method might grow out of the present county control associations. It must be remembered, though, that similar attempts at voluntary production control in the past have always broken down, owing to the tendency of outsiders to increase production and get an undue share of the benefits while making none of the sacrifices. However, the overwhelming vote given by southern farmers for a continuation of the Bankhead plan suggests that farmers as a whole may continue willing to put up with the difficulties of compulsory controls, for the assurance they give of continued balanced production.

Role of Government Land Buying

Another way in which adjustment might be continued is through the direct acquisition of land, or through arrangements for control of its use between the Federal Government and the individual farmers. The program for withdrawing submarginal land, in which more than 5 million acres may be purchased by Federal agencies during the current year, is one step in this direction. It would be exceedingly difficult, however, to take care of the whole surplus problem through the purchase of submarginal land alone. Such a small proportion of the poorer farms is devoted to commercial crops, and farmers on such land produce so little above their own subsistence requirements, that it might be necessary to purchase 100 to 150 million acres in order to retire 30 to 40 million acres from the major commercial crops. Moreover, the withdrawal of land from farming involves a serious problem in finding other occupations for the men who now farm the land. In the small amount of submarginal land purchased so far, the problem of the transfer and rehabilitation of the population has been more difficult than the problem of buying the land. On the tremendous scale suggested above, this would involve almost insuperable difficulties for any short-time program. Withdrawal of submarginal

land from production and rehabilitation of the people now on that land in more productive work, where they can maintain a higher standard of living, is very important from the standpoint of the common welfare, but it can make only a small contribution to the whole program of maintaining a proper balance between farm production and the demand.

Direct Control of Land

Another possible way in which agricultural adjustment might be continued would be through direct control of land. One possible avenue would involve modification of our whole system of land laws, so as to establish the right of public agencies to restrict or limit in the common interest the use which an individual makes of his land. This right has already been recognized in the city zoning ordinances which restrict the size and type of buildings to be erected on various plots. Through State legislation zoning restrictions for agricultural land might restrict the proportion put in cultivated crops, or the utilization of land for various types of crops. This, however, could be only a slow development and would represent a very material change in our

present ideas of what farm-land ownership means.

One other possibility lies in the expansion of domestic consuming power to use the full productive power of American farmers. We do not now have enough farm products to give every person in this country the liberal diet consumed by those with comfortable incomes. At the same time three-fourths of the families in this country do not have incomes high enough to enable them to pay for the time and energy necessary to produce, manufacture, and distribute such a diet for all our people. It would take many years to increase sufficiently the incomes of those who previously have not had a satisfactory standard of living. Increased domestic buying power would offer the possibility of ultimate demand for much more agricultural products than it has ever taken in the past, and farmers, given that expanded domestic purchasing power, could expand their production to take care of that more adequate consumption. But for many years it will be necessary to hold farm production in balance with the current rather than with the ideal levels of consumption. Farmers may look hopefully forward, however, to a time when demand can utilize the full productive power of American agriculture.

Payment For Permanent Control

Another possibility would involve the purchase of control over land by the State or Federal Government on a permanent or semipermanent basis, instead of on the 1-year basis provided by present benefit contracts. Instead of paying farmers a given sum of money to adjust their production in any 1 year, they could be paid for permanent control over part of their acreage. This might be done by leaving the land as the property of the individual farmers, but with the Federal Government authorized to restrict its use to forest pasture, hay, or other products as seemed wise in any particular period, the provision being made that only the owner of the farm should have the right so to use the land.

As compared with withdrawal of submarginal land, this would involve holding out of production over long periods part of the land on each farm. As a permanent program, it would be rather unde-

sirable to reduce the size of each of the present operating farms, instead of concentrating in a large area all the land withheld from production. As an intermediate program pending full restoration of domestic and foreign demand, however, and holding the land in reserve for eventual restoration of agricultural production, this program might offer advantages.

Impractical to Drop Adjustment Efforts

One possible course would be not to attempt to continue the adjustment of production after farm prices reach parity and to permit the production and acreage of farm products again to be controlled solely by the farmers' response to prices. The evidence of previous years indicates that if this were done, farmers would soon lose much that they have won under the A. A. A. There would probably be a restoration of the cycles of over and under production in hogs, beef cattle, cotton, potatoes, etc. Farmers would face also the danger of excessive production as a whole, with a generally lower level of farm prices. The Agricultural Adjustment Act recognized these possibilities and directed that effort be made to maintain as well as to establish a good balance between production and consumption. The alternative of abandoning efforts at control, therefore, seems one which may be definitely ruled out, both from the point of view of the economic welfare of the farmers and the country as a whole.

No matter what continuing program is used, it will have to provide one element which the A. A. A. programs so far have largely failed to provide. That is greater flexibility in the operations of individual farms. As an emergency attack, it has been necessary to make the adjustment of production upward or downward in blanket form, usually by the same percentage for all farms. Such a rigid program obviously could not prove satisfactory over a long period. Young men acquire farms; young farmers develop into mature farmers capable of handling larger units; mature farmers become older and then do not wish to undertake such extensive operations; older farmers retire and work their farms on a very moderate basis or gradually quit farming. Changes in the organization of the farm and the area in crops will inevitably come with these changes in age. The availability of help from the sons as the family grows up also will influence the size of the farm and the intensity with which it is operated.

Geographic Shifts in Agriculture

Besides these changes in the individual family situation, and many others which it is needless to indicate at length here, there are broad geographic shifts in agriculture with the passing of the years. Cities grow and require an increased production of milk, fresh fruits, and vegetables, etc. New methods of transportation are developed which result in shifts in areas where it is profitable to grow certain crops. New markets develop and demand new products. The price relations change between value of product and cost of transportation, shifting in or out the points where it is best to raise livestock or sell these crops. New varieties of crops or improved strains of livestock are developing, which may greatly change the possibilities of economic production. These and many other changes will need to continue. The adjustment of agricultural production under the A. A. A. has left

very little leeway for these economic and social changes. If the program is to be continued, it is essential that it operate so as not to "freeze" agriculture in its present form but instead to leave it sufficient flexibility to change and shift with changing individual needs and economic conditions. At the present time little can be said about the solution of this problem. It remains a problem to which increasing attention must be given if the adjustment of agricultural production is not eventually to prove a cramping rather than a helpful force in American agriculture.

Early Consideration of the Problem Necessary

It may be several years yet before American farmers have to turn from the emergency processing tax support of the adjustment program to another program of production adjustment. The possibilities suggested above and other mechanisms which may be developed will all have to be canvassed carefully, if farmers are to continue to have

balanced production.

The adjustment program has been under way for a year and a half. The processing-tax-and-benefit-payment plan, which has served for the emergency reduction of production, seems unlikely to be adequate permanently. At the present time no definite answer can be made as to what modification will prove the best alternative. Control of land use, partly through submarginal-land withdrawal, and possibly partly through permanent control of portions of existing farms or through zoning regulations, may offer a partial solution. Compulsory control of individual operations may be found satisfactory for permanent application in certain areas or for certain products. Expanding foreign and domestic markets may make continued adjustment less difficult but not less necessary. New methods not yet foreseen may need to be evolved.

The problem is one which must be studied carefully by all thoughtful farmers and all other persons interested in continuation of a prosperous agriculture and a well-balanced functioning economy.

MORDECAI EZEKIEL, Economic Adviser to the Secretary.

LFALFA Wilt Control by Breeding Making Remarkable Progress

One of the serious problems in alfalfa production is that of bacterial wilt. This disease threatens the crop especially in the Central and Western States,

where alfalfa growing is most concentrated.

The causal organism has been isolated, but various cultural methods have not been successful in controlling the disease. It has been found, however, that some plants, especially those of Turkistan origin, are more or less resistant to bacterial wilt, and this fact forms the basis of the present breeding program designed to produce an alfalfa at once highly resistant to the disease and to cold and combining the desirable characters of yield and other qualities now found in certain varieties highly susceptible to bacterial wilt.

This work, carried on by the Bureau of Plant Industry in cooperation with State experiment stations, including those of California, Kansas, Nebraska, and Wisconsin, has been in progress about 6 years, and tangible results are now appearing. Plants of alfalfa have been selected from outstanding old fields and from many introductions from Turkistan, Persia, Spain, Africa, and other foreign countries, collected by representatives of the United States Department of Agriculture. Many of these strains have been self-fertilized (the same plant being both male and female parent serves to intensify and purify the resistance to wilt) for five generations, each generation being subjected to controlled cold-resistance and wilt-resistance tests, with the result that some of the selections now available have almost twice as much resistance to bacterial wilt as the most resistant variety available before the breeding program was begun. These selections are being used for crossing with desirable varieties such as Grimm and Cossack, and the results on the whole so far suggest the definite probability that within the not-far-distant future varieties of alfalfa that combine disease resistance with other necessary and desirable qualities will be developed and made available for distribution.



FIGURE 1.—Test plots of alfalfa varieties at the Nebraska Agricultural Experiment Station: A and E, Nebraska Common; B, Spanish; C, Turkistan; D, Italian. The superior cold and wilt resistance of the Turkistan strain has enabled it to maintain a stand much longer than the others. Plots planted in 1922, photographed in 1932.

An idea of the economic importance of a wilt-resistant alfalfa can be had from the fact that where the disease is severe Grimm, Cossack, and Kansas Common alfalfa seldom retain a stand more than 3 or 4 years. On the other hand, the most resistant varieties obtainable at the present time, including Hardistan, Kaw, Turkistan, and to a lesser extent Ladak, under similar conditions maintain stands at least 6 or 7 years (fig. 1). In Kansas and Nebraska there are approximately 2,000,000 acres of alfalfa. If alfalfa maintained a stand 2 years longer than the present estimated average life of 5 years, 115,000 acres less alfalfa would have to be replanted annually to maintain the total acreage. To replant these 115,000 acres costs at least \$460,000. This annual cost to Nebraska and Kansas farmers would be avoided if a desirable alfalfa were grown which would last the conservative period of 2 years longer than the domestic alfalfas now available.

H. M. Tysdal, Bureau of Plant Industry.

ALLOTMENTS Under A. A. A. Programs Obtained from Census and Other Sources

To carry out the purposes of the Agricultural Adjustment Act successfully and with fairness to all sections and individuals, it

was necessary first to determine the acreage and production of the different crops by States and counties as a basis for the allotment of permissible acreage and of cash benefits. The responsibility for determination of these base-year figures on acreage and production and of the allotments for States and counties was placed upon the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics.

As groundwork for determining base-year acreages and production, the Bureau had available certain factual data, consisting of the United States census enumeration of 1930, by States and counties, and of similar annual data collected by local assessing officers for a number of important agricultural States. Supplementing these data were cotton-ginning records, by counties, collected by the United States Bureau of the Census; records of receipts of rough rice by mills; of receipts of various grains by mills and elevators; of shipments of grain and vegetables out of important producing areas; of special enumerations and surveys for limited areas; of acreage and production for many irrigation units; and of the Bureau's own estimates for past years by States, and for some States by counties.

The census figures were the main reliance for basic figures for the year 1929. As a check upon the relation of townships or other subdivisions within the county to each other, a special tabulation was made of the census records of acreage and production in these minor subdivisions for 1929. The assessors' enumerations where reasonably complete, were of next importance in determining absolute acreage and production from year to year and relationship as between counties.

As a means of checking the annual enumerations by assessors, there were available for comparison the enumerations by the Federal enumerators with those by the assessors for 1929, and the assessors' enumerations for successive years with their enumeration for 1929. The first comparison showed the approximate extent of understatement by the assessors in the census year and the latter indicated whether the successive yearly enumerations by assessors were reasonably uniform as to completeness.

Two Main Lines of Approach

Two main lines of approach were available toward establishing county estimates in the years selected by the Agricultural Adjustment Administration as base years by which to measure relative acreage and production. The first was to take the record of acreage and production by States and break it down, by districts and then by counties, on the basis of the census record of relative acreage and production. The second was to build up from available records the indicated acreage, yield, and production by counties and districts, subsequently modifying the estimates to conform to established State totals. Both of these methods were utilized to a greater or less extent as conditions and records in the various States permitted and the results were checked against one another and by all data available from other sources. In the aggregate, a great deal of factual information was

available bearing upon the problem of acreage and production by counties.

Two major objectives were held in mind in establishing estimates of base-year acreage and production and in figuring allotments: (1) To make certain that the success of the entire program of acreage adjustment was not imperiled by giving to the farmers of any section immediate or ultimate benefits to which they were not justly entitled and (2) to be assured that each section and each producer received as nearly as possible the allotment to which the section and the producer were entitled by reason of actual plantings and yields during the base-year period.

Where droughts, floods, and other unusual situations had affected the record to the extent that it tended to deprive communities of a fair participation in the benefits of the program, the Agricultural Adjustment Administration authorities, in their discretion, formulated rules of allowances or of alternative procedures with a view to

equalizing the benefits of the plan to all communities.

In making up the record of base-year performance and establishing allotments, due consideration was given to all factual data, both those assembled by the Bureau and those presented from any other source. Appeals by States and counties for larger allotments were often made on the basis of locally assembled data. Examination of such material in some instances disclosed the need for changes in the preliminary estimates and allotments but much oftener the data presented were found to be unreliable. The assessors' data were very good in some States but poor in others and entirely lacking for a majority of the States outside those of the north-central geographic division. They were not uniformly good in all counties even where available. Every effort was made to allow for the variation in completeness of these data in the different counties.

Samuel A. Jones, Bureau of Agricultural Economics.

NTHRAX Control Has
Been Aided by Results
of Recent Experiments

In anthrax-infected districts immunization of susceptible animals plays an important role in control. At present there are several immunizing

agents with which animals can be made resistant to the disease. Each has a particular field of usefulness and also definite limitations.

Much new information on the relative values and limitations of six of the available anthrax-immunizing agents was obtained by the Bureau of Animal Industry through recent experimental tests on sheep. The animals used for study had had no previous contact with anthrax and carefully controlled conditions permitted the results to be evaluated on a comparative basis.

The products subjected to comparative tests were antianthrax serum, antianthrax serum and anthrax-spore vaccine in combination, anthrax-spore vaccine single injection, anthrax-spore vaccine intradermic, anthrax-spore vaccine in saponin solution, and anthrax bacterin (washed killed culture). In the tests each of these products produced definite protection against a subsequent exposure to virulent anthrax. Some variation was found, however, in the rapidity with which full immunity was produced by the different products, as well as the length of time that the respective immunities lasted.

In these tests the earliest complete protection was obtained with two of the products, namely, antianthrax serum alone and anthraxspore vaccine intradermic, this being at 4 days after vaccination.

complete immunity having endured for a period of a year. The shortest duration of immunity was that produced by antianthrax serum alone. Definite evidence of waning of immunity was noted with this product at approximately 2 weeks after vaccination.

The results of these tests furnish sound experimental evidence indicating the particular field of usefulness of each of the products tested and add to the knowledge of the limitations to which each product is This knowledge emphasizes the fact that immunization against anthrax is not merely a simple mechanical operation but a highly technical procedure that should be undertaken only by experts who are thoroughly qualified in this field. Veterinarians by reason of their special training are best fitted for controlling the disease. Additional information on these comparative tests may be obtained on application to the Bureau of Animal Industry.

W. S. GOCHENOUR, Bureau of Animal Industry.

RTIFICIAL Drying Provides The possibilities of growing Means of Preserving Feeding large amounts of forage for Value of Immature Grasses

feeding purposes, and utilizing it when in its immature stages.

have been emphasized by the advent of the commercial forage-drying machine. The purpose of preserving forage in a relatively immature condition is to obtain a roughage feed of high protein and nutrient content. The dry matter of young rapidly growing forage is high in protein, minerals, and vitamins, and low in fiber content. As the stage of maturity advances, the nutritive value of the forage decreases. This results principally from a change in the chemical composition

and from a reduction in the digestibility of the nutrients.

If a satisfactory method of preservation is developed, a much larger percentage of the dairy ration can be supplied in the form of homegrown feeds. If, for instance, pasture grass can be dried artificially at a stage of maturity at which it still contains a high percentage of protein, the grass by itself, or in combination with hay and silage, will make a complete ration for dairy cows in the winter, just as pasture makes a complete ration in the summer. It would be necessary, of course, when putting up forage in this way to cut it several times during the season. Drying by artificial means could be accomplished at a time when the grass is ready to be cut regardless of weather conditions.

Artificial Drying Reduces Waste

Artificial drying of forages has certain advantages over the conventional way of making hay. It reduces waste through leaching and loss of leaves, and can be done regardless of weather conditions. success and future development of this method of preserving forage crops depend upon (1) the cost of drying and (2) the effect of drying upon the feeding value of the dried product. Pasture is well adapted to frequent cropping, because of its perennial nature and its quickness

in recovery. It is also one of our highest yielding crops. During the last 4 years the Bureau of Dairy Industry, in cooperation with the Western Washington Experiment Station and the Washington Agricultural Experiment Station, has carefully studied the nutritive properties of artificially dried pasture herbage and the effect of the drying process on its feeding qualities. The pasture contained a mixture of grasses and clovers and was cut when 2 or 3 weeks of age and dried in an experimental artificial drying machine.

Immature Grass Highly Nutritious

The high protein content of pasture herbage when cut every 2 or 3 weeks, averaging in many cases as much as 24 percent, is maintained throughout the growing season. Moreover, this immature herbage maintains a relatively constant low content of fiber throughout the season. A minor significant item in its composition, as compared with that of drier and more mature forage, is its high calcium and phosphorus content. These elements tend apparently to be more concentrated in herbage when it is growing rapidly, particularly if well distributed rains occur during the growing season.

When artificially dried pasture grass exclusively was fed to dairy heifers, it proved palatable and highly nutritious. Two-year-old heifers consumed approximately 15 pounds of the dried material per day. This was sufficient for maintenance and some gain in live weight. The digestibility of the various nutrients was not affected by the drying process. The herbage contained a digestible crude-protein content of 18 percent and a total digestible nutrient content of 65 percent. In these respects it compared favorably with many high-

protein concentrate feeds.

Using grass 3 weeks old, the investigators studied the effect of the temperature of artificial drying on the digestibility and availability of the feed nutrients. Pasture herbage was dried in the machine at exhaust-gas temperatures of 250°, 300°, 350°, and 400° F. When compared with rations of green and sun-cured grass, the grass artificially dried at different temperatures did not change in chemical composition, except that drying at 400° produced a significant increase in the crude-fiber content. This indicated that portions of the more leafy materials were burned. Furthermore, the herbage that was dried at 400° had a much lower coefficient of digestibility for protein and to a lesser extent for dry matter, crude fiber, and nitrogen-free extract, than herbage dried at lower temperatures. Apparently the intense heat reduced the availability of the calcium. Nutrients in grass dried at lower temperatures were as efficiently digested and utilized as those in green and sun-cured herbage. As the temperature of drying was increased, the percentage of natural color in the herbage was adversely affected. It was evident that raising the temperature in the artificial drier to extremely high levels, to get increased efficiency in the utilization of fuel, lowers the nutritive value of the feed.

Vitamin D in Green and Dried Grasses

Further experiments determined the vitamin D content of artificially dehydrated pasture grass, as compared with that of similar grass fed in a green and sun-cured condition. When rats received

green, artificially dried, or sun-cured herbage, in addition to a basal diet, they developed significantly higher percentages of ash in their bones than did rats receiving only a basal diet deficient in vitamin D. Either the green or the artificially dried grass produced calcification as efficiently as the herbage cured by exposure to 15 hours of sunlight. When fed as 3 percent of the dry matter of the ration, there was sufficient of the calcifying factor in the grass to cause an increase in the calcification of the bones in the experimental animals. Dehydration at high temperatures for a short time did not destroy the calcifying property of the herbage.

Dried Grass May Displace Some Grain

Two feeding trials were conducted in which dried grass was substituted for part or all of the grain mixture fed to milking cows. In the first experiment, cows in heavy production were fed, in addition to alfalfa hay and silage, a grain and grass mixture of which 20 percent was artificially dried grass. The cows ate slightly less grain-grass concentrate mixture, gained less weight, and produced a little less milk than when they received a similar ration in which wheat bran and linseed meal were substituted for the grass. The consumption of feed and total digestible nutrients per unit of production, however, was slightly in favor of the experimental mixture.

The addition of grass to the concentrate mixture made it rather bulky, though it was palatable and readily eaten. The comparative differences were small, and indicated that where an adequate supply of artificially dried grass is available it may be efficiently substituted for as much as 20 percent of the protein-rich concentrate mixture.

In the second experiment, 2 cows were maintained on a ration of alfalfa hay and artificially dried grass for 4 weeks and then switched to an all-alfalfa ration, as compared with 2 other cows that were put on an alfalfa-alone ration and then changed to an alfalfa-hay and dried-grass ration. The addition of dried grass to the alfalfa-alone ration of milking cows caused a greater consumption of total digestible nutrients. This greater consumption of nutrients produced a larger gain in live weight and a larger output of milk and butterfat. While the nutrient consumption per unit of production was approximately the same, the increased consumption of feed brought about by the addition of dried grass to the ration caused the cows to produce more milk.

This experimental work demonstrates that a home-grown feed palatable to dairy cattle, and having a high protein content, can be produced from pastures by frequent cutting and artificial drying of the herbage; that artificial drying within certain temperature limits does not affect the nutritive value of herbage either in the organic or the inorganic constituents; and that artificially dried pasture grass may be used efficiently with other roughage feeds, and as a substitute for protein-rich concentrates in the rations of lactating dairy cows. The cost for drying equipment is the major item which limits a more general use of this means of preserving forage crops for feeding purposes.

R. E. Hodgson, Bureau of Dairy Industry.

BACTERIAL Wilt of Corn Combated by Use of Resistant Strains Bacterial wilt or Stewart's disease of corn is caused by a bacterial parasite (Aplanobacter stewarti). This organism grows abundantly in the vessels

or water-conducting system of the corn plant and comes out as viscid yellow drops on the cut ends of badly infected stalks (fig. 2). The disease may attack the plants at any stage in their growth. Young plants may wilt and die, or if they continue to grow may remain stunted. Tassels develop prematurely, and the leaves wilt one after

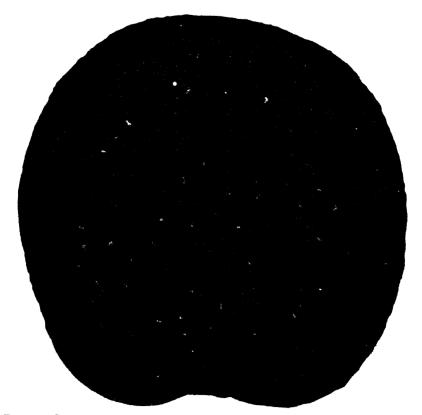


FIGURE 2.—Cross section of stalk of corn badly infected with bacterial wilt and showing yellow coze from cut ends of vessels. Magnified three times.

the other (fig. 3). Long, light green to yellow streaks extend through the leaves. Infected plants that develop to normal height may be barren or produce only nubbins. Because of the dead and stunted

plants, badly infected fields are very uneven.

This disease was first described on sweet corn in 1897 by F. C. Stewart, who found it widespread and abundant in the market gardens of Long Island, N. Y., frequently causing losses of 20 to 40 percent and sometimes destroying whole fields. He found that the earliest-maturing varieties of sweet corn were the most susceptible and that late varieties were resistant. To control the disease he

recommended that only late-maturing, resistant varieties be grown and that care be taken in selecting clean seed. His recommendations

were not followed, for most desirable varieties of sweet corn for table use are the early-maturing susceptible varieties. Market and home gardeners continued to grow them, and so produce much infected seed. 1899 the disease was found in New Jersey, and in 1903 it was observed for the first time in Maryland and Virginia. It was gradually found southward through Pennsylvania, Maryland, and Virginia and in the Carolinas andGeorgia and westward through the Corn Belt Iowa, Missouri, Kansas, Texas, New Mexico, and Cali-fornia. The disease did not extend into the northern tier of States



FIGURE 3.—Golden Bantam hybrid: A, Normal plant; B, stunted plant infected with bacterial wilt, tassels premature.

with the exception of southern New York, southern Michigan, Massachusetts, and possibly North Dakota and South Dakota.

Damage Heavy in Recent Years

With the continued spread of the disease the annual losses also steadily increased. In most years losses were not great, but in the older disease areas, such as Maryland and Virginia, it finally became necessary to grow only the late-maturing, resistant varieties such as Stowell Evergreen and Country Gentleman. In a few exceptional years losses were heavy, and then again the disease became of minor importance. During the seasons of 1931-33 wilt was more wide-spread and destructive than ever before in its history. It spread northward into Wisconsin, central Michigan, and New York, into Ontario, Canada, and into Maine and New Hampshire. Throughout the Corn Belt losses were heavy in susceptible varieties, and losses of 10 percent in late resistant varieties were common. In 1932 Indiana reported a loss of 50 percent in early plantings of susceptible varieties; Pennsylvania, 45 percent; Iowa, 5 percent; New York, 10 percent; Connecticut, 3 percent; and Massachusetts, 0.5 percent. In 1933 Michigan reported 93 to 100 percent infection in early varieties such as Spanish Gold, Golden Gem, and Extra Early Bantam; 64 to 91 percent infection in midseason varieties such as Sunshine and Golden

Bantam; 10 to 29 percent in Stowell Evergreen; and 3 percent in Country Gentleman. These were percentages of infected plants and not actual losses.

This most recent epidemic of bacterial wilt occurred following a succession of mild winters. The winter of 1933-34 was much more severe throughout the Central and Northern States, and reports for the 1934 season indicate that the disease was again much less severe.

Introduction of the disease into new localities is at least partly brought about by infected seed. The wilt organism lives from one season to another inside the seed. It is not known how effective seed treatments are in controlling this seed-borne infection. The use of clean seed where the disease has not become established is important, but the use of clean seed of susceptible varieties grown where the disease does not occur is of doubtful value in wilt-infested areas. Experience has shown that such strains are often more susceptible than strains grown in wilt-infested areas.

Organism Overwinters in Flea Beetle

The percentage of diseased plants even from badly infected seed is so low that it accounts for only a small part of the early infections on young plants in the field. Recently it has been learned that the wilt organism lives over winter in one of the common flea beetles (Chaetocnema pulicaria). In the spring such beetles carry it to the young corn plants on which they feed. Possibly this accounts for a large part of the early infections. A great increase in number of diseased plants during midseason also is brought about by this same beetle. Infections on the leaves may be seen starting from the feeding injuries on the outer halves of the leaves and progressing down through the leaf blade to the stalk. It was this type of leaf infection that occurred in dent corn in Illinois in 1932. The insects feed on resistant as well as susceptible varieties of corn, but on the resistant varieties the infections are much more restricted in area and develop more slowly, so that the injury is usually confined to the outer halves of the leaves. On the other hand, in susceptible varieties the bacteria work back into the stalks more rapidly, and then out into the whole plant.

The wilt organism overwinters in old, infected cornstalks in the field, but it is not known how important this is in starting the disease in the spring. Crop rotation has not been shown to be effective in

controlling the disease.

The control measures recommended by Stewart in 1897 still hold good. Use clean, disease-free seed in sections where the disease does not occur, and plant resistant varieties in sections where the disease has become established. The development of wilt-resistant, early-maturing, high-quality sweet corn is making it possible to practice the second and by far the most important method of control.

Resistant Strains

During the past several years plant breeders in the Central and Eastern States have been taking advantage of the marked differences in resistance and susceptibility of varieties of sweet corn. By methods of inbreeding and crossing they have been developing early-maturing, wilt-resistant strains which are as desirable for table use as the original early varieties which were so susceptible to wilt. In

1933 seed of one of these early resistant strains known as Golden Cross Bantam, developed by the Department in cooperation with the Purdue University (Indiana) Agricultural Experiment Station, was sold for the first time by a number of seed companies. This hybrid proved very popular. Reports from several States were encouraging. Very little wilt occurred on Golden Cross Bantam when other earlymaturing varieties suffered heavy losses. From Ohio it was reported that the only good fields of early sweet corn were Golden Cross This variety is 4 to 8 days later than the earliest Golden Bantam, but still earlier strains are being developed. A number of other early resistant strains of sweet corn, developed by the Connecticut Agricultural Experiment Station, are now being commercially produced. With the general planting of these resistant strains heavy losses from this disease can be avoided.

CHARLOTTE ELLIOTT, Bureau of Plant Industry.

ARK Beetle Control in by Work of C. C. Camps

The establishment of the Civilian Western Forests Aided Conservation Corps in the spring of 1933 made available a new force for the protection of our national for-

ests and parks. Up to that time bark beetle control projects had been manned by local labor skilled in the ways of the forest. Camps comprising about 25 men were established as working units in the infested areas, wages were in line with those paid for skilled woods labor, and a thoroughly efficient job with low costs for volume of timber treated was expected and ordinarily obtained. The C. C. C. camps, as they were set up to handle all types of forestry projects, presented an entirely different sort of human material with which to conduct these campaigns. These camps were made up of labor in company units of about 200 men. Only young men between the ages of 18 and 25 were enlisted, the great majority of whom came from the cities and included boys unskilled in the use of woods tools. The training of the C. C. C. men in the physical work of felling, limbing, and peeling trees at first required considerable attention. Gradually, however, the men became proficient in the use of tools.

In California a fairly large-scale program was carried on during the summer of 1933 on national parks and in national-forest recreational areas. This was possible because climatic conditions permitted the use of solar heat, in lieu of fire, for destroying the bark beetle broods during the season of high fire hazard (fig. 4). In southern California the work was concentrated in areas of high recreational value, where 4,957 trees containing the equivalent of 2,760,000 board-feet of lumber were felled and the insects destroyed. In the Yosemite National Park work was continued throughout the summer in the sugar pine forests, where the trees were of great size and value. During the winter months the work was conducted to better advantage, as many of the boys who had acquired experience during the summer reenlisted, and the winter program was concentrated in commercially valuable timber on the Modoc, Lassen, and Stanislaus National Forests. In the entire State 9,200 trees with a volume of 8½ million board-feet were treated by C. C. C. labor between July 1, 1933, and April 1, 1934. Approximately 350,000 acres of forest land were included in the program. Forty technical men were employed as insect-control foremen and

spotters for the supervision of these projects. The number of enlisted men assigned to this activity ranged from 200 to 300, according to the

seasonal conditions of the work.

In Washington and Oregon control work in the suppression of bark beetle outbreaks was conducted largely on national parks and Indian reservations. During the spring of 1933 the two C. C. C. camps in Crater Lake National Park contributed 4,581 man-days in the treatment of 6,349 infested lodgepole pine trees. This work represented the final clean-up of an infestation that had been running for several years, and was so effective that only 13 infested lodgepole pine trees could be located for treatment in 1934. In 1934 the program for this park consisted in mopping up some scattered infestations in ponderosa and sugar pine, and 142 trees were treated by the C. C. C. boys. On the Yakima Indian Reservation a virulent outbreak of the western pine beetle was combated on 7,160 acres by crews of Indian boys in



FIGURE 4.—C. C. C. workers in Yosemite National Park preparing timber for destruction of broods of the western pine beetle by solar heat.

the C. C. camps. A total of 2,383 infested ponderosa pines were felled, peeled, and burned during the fall of 1933 and spring of 1934, resulting in a marked reduction of timber losses on this reservation.

In the northern Rocky Mountain region several thousand trees in the Yellowstone National Park and on the Medicine Bow, Montezuma, Kootenai, and Shoshone National Forests were treated by

C. C. C. labor during 1933 and still more in 1934.

In addition to control work, some special research and survey projects were carried on with the aid of C. C. C. labor. A few men, who had sufficient education and who showed adaptability for such work, were placed on special assignment under the direction of the Bureau of Entomology. These men worked, as assistants, immediately under a forest entomologist in obtaining basic data needed in determining the status of the bark beetle populations in areas where control work was contemplated. In California C. C. C. men aided in a study of the effects of a cold wave during the winter of 1932–33, which killed a large

proportion of the beetle broods, by determining the area affected by the cold. In Oregon and Washington and in the Rocky Mountains selected men from the C. C. C. camps assisted in conducting surveys to determine the need for control. During 1933, 37 of these men covered 18,240 acres of sample plots with intensive check cruises. They also assisted in analyzing the emergence from 2,879 square feet of bark affected by the winter freeze to determine the influence of this cold weather on bark beetle outbreaks.

J. M. MILLER, Bureau of Entomology and Plant Quarantine.

BEECH Scale Scouting Reveals Infestations in Four New England States

The beech scale was first discovered in the United States in 1929 on American beech in the Arnold Arboretum, Boston, Mass. Its first

boretum, Boston, Mass. Its first occurrence in North America, however, was reported in 1911, when it was found infesting both native and ornamental European beeches in

the vicinity of Halifax, Nova Scotia. In 1932 it was reported to have spread generally throughout the Maritime Provinces of Canada, and that many of the infested beech trees had died. This insect is well distributed over western Europe, and in some countries the infestation has at times been severe and followed by an extensive killing of beech trees.

The discovery of the scale in the United States on American beech (Fagus grandifolia Ehrh.), and also on varieties of European beech (F, sylvatica L.), threatened danger to the beech in this country. 1931 the Bureau of Entomology, through its laboratory at Melrose Highlands, Mass., undertook a survey of the beech growing on or near many of the roadsides in each of the New England States. In this work they were assisted by the Maine Forest Service, the New Hampshire State entomologist's



FIGURE 5.—Trunk of American beech tree heavily infested with the beech scale.

office, and the Massachusetts Department of Conservation. Scouting for new infestations was carried on for short periods each

year and occasional notes were made on the biology of the beech scale until September 1933, when a substantial allotment of E. C. W. funds made it possible to enlarge the scope of the work consid-

erably.

As a result of this work infestations of the scale have been located as follows: Maine, 57 towns in 8 counties; New Hampshire, 3 towns in 2 counties; Massachusetts, 14 towns in 4 counties; and Connecticut, 1 town. The heaviest infestations have been found in Washington, Hancock, and Waldo Counties, Maine, where large forested areas of native beech are involved, and in scattered growth in eastern Massachusetts.

The beech scale has a single generation a year. In New England eggs are deposited from the middle of June until August. Hatching begins about the 1st of August, and by the 1st of October practically all the crawlers, as the newly hatched larvae are called, have become fixed by inserting their beaks in the bark. The secretion of woolly wax begins immediately and continues for a time in the fall, but the maximum deposition occurs the following spring and summer. In heavy infestations this wax may completely cover the trunk (fig. 5) and the under sides of the larger branches. Trees of all ages, including seedlings and saplings, have been found infested with the scale. The scale overwinters as the fixed immature form. In May it transforms to a preadult, and about 15 days later it becomes mature. No males or winged forms of this species are known. Distribution is accomplished by the wind and by transportation of eggs and crawlers by birds, insects, etc.

Permanent Sample Plots Established

In order to study the injury caused by this insect and the associated fungus, Nectria sp., several permanent sample plots have been established in southeastern Maine. A survey of conditions on these plots in October 1933 showed that trees infested with the scale were less healthy than uninfested trees. Many dead and dying beeches were found in Washington and Waldo Counties, and such trees were usually infected with a fungus belonging to the genus Nectria. This fungus has not been found associated with the scale in New Hampshire, Massachusetts, or Connecticut.

In feeding, the scale inserts its beak into the bark for about 1.5 millimeters. Individual scales probably cause little or no injury, but when colonies of several hundred per square inch are present, the outer layer of the bark is killed and becomes brown. When a tree is heavily infested with the scale, extensive areas, often more than 50 percent, of the outer bark are killed. When the bark is removed, it is found that the killing often extends to the cambium and occasionally the sapwood is discolored. Slime fluxes often develop, and the cambium is killed

for a radius of 2 or 3 inches from the point of injury.

Whether the tree would ultimately die from such injury without the aid of the *Nectria* has not yet been determined, but this seems to be possible if the areas of affected sapwood are sufficiently large to girdle the tree. If for some reason, such as winter-kill, the scale infestation disappears, the tree often shows recovery by producing healing tissue around the wound. When this takes place, a depression or pit is formed in the bark, giving the trees a gnarled appearance, especially

where the pits are numerous. In Washington County, Maine, many

trees show these pits.

Observations made during May and June 1934 showed that the scale is very susceptible to low winter temperatures. In southeastern Maine over 95-percent mortality occurred above the snow line, while near the ground and on roots there was little mortality that could be attributed to low temperatures. In the vicinity of Boston, Mass., there was no appreciable mortality from this cause.

One Natural Enemy of Importance

Only one natural enemy of importance has been found in New England. The predacious ladybird beetle known as the twice-stabbed ladybird, Chilocorus bivulnerus Muls., was especially effective in southeastern Maine during the spring and summer of 1934. With the reduced host population resulting from the abnormally low temperatures of the previous winter, which affected the beetle little or not at all, an opportunity was afforded for the predator to be most effective as a control agent. Observations at Liberty (Waldo County), Maine, have shown that on heavily infested trees, upon which the beetles prefer to congregate, the scale population has been reduced by fully 90 percent; on lightly infested trees the percentages of hosts destroyed were considerably less.

The impracticability of spraying large forested areas is recognized, but there is a need for controlling the beech scale by artificial methods in park and ornamental plantings. This insect may be controlled with a dormant spray of lime-sulphur, either the liquid form diluted at the rate of 5 gallons in 95 gallons of water or the dry mixture at the rate of 12 pounds to 100 gallons of water. Oil sprays should not be used indiscriminately on beech, as some brands are liable to injure the trees if applied in sufficient strength to kill the scale. The use of oils in con-

trolling the beech scale is being given further study.

C. W. Collins and R. C. Brown, Bureau of Entomology and Plant Quarantine.

BEEF Cattle Especially Adapted to Gulf Coast Area Being Developed The popular breeds of beef cattle in the United States—the Aberdeen-Angus, Hereford, and Shorthorn, all of British origin—have adapted themselves well

to the greater portion of our vast beef-production areas. Owing to a combination of factors largely climatic, the breeds mentioned do not meet fully the requirements of the extreme South, particularly the Gulf coast area. The principal reasons appear to be the warm climate, low feeding value of native vegetation, and lack of sufficient hardiness in highly bred beef cattle to combat semitropical conditions.

The solution to this difficulty of adaptation appears to be not the finding or development of an entirely new breed, but rather a combining of the beef-producing ability of the British breeds with hardiness to tropical or semitropical conditions, as observed in some other foreign breeds and types. A distinct beginning in this direction was made in 1906, when the Pierce Estate of Wharton County, Tex., brought from India 30 bulls and 3 cows of the Nellore and other breeds of Brahman cattle. These were used largely in crossing with Here-

fords and Shorthorns. In 1924 another noteworthy importation of Indian cattle was made by John T. Martin, San Antonio, Tex. It consisted of 29 bulls, principally of the Guzerat breed, that had previously been imported into Mexico from South America. The Guzerat bulls were larger and beefier than those of any previous importations, and they have "nicked" well with the native cattle, as well as with Herefords and Shorthorns in southern Texas.

Using both Indian and British breeds of cattle, Robert J. Kleberg, Jr., Kingsville, Tex., has been successful, after about 15 years of constructive crossbreeding, in developing a meritorious Brahman-Shorthorn crossbreed type of approximately three-eighths Brahman five-eighths Shorthorn blood. This type, which he named "Santa Gertrudis", is red in color, very deep of body, of good beef conformation, hardy with extreme "scale" (weight for age), showing great adaptability and seemingly breeding true to type.

Experiments Show Influence of Brahman Blood

The value of Brahman breeds crossed with Hereford and Shorthorn cattle is evident also in breeding and feeding experiments conducted

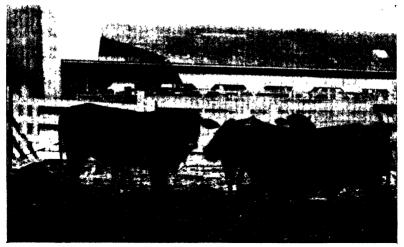


FIGURE 6.-First-cross yearling Guzerat-Aberdeen-Angus bulls.

by the United States Department of Agriculture at the Iberia Livestock Experiment Farm, Jeanerette, La., and at Kingsville, Tex., in cooperation with the State agricultural experiment stations of Louisiana and Texas. These and other investigations of the Department in cooperation with private breeders indicate that Guzerat and Nellore cattle have considerable value when crossed with established beef breeds in the development of a beef-type crossbred that will utilize the native grasses of the Gulf coast country to advantage in the production of cattle to be finished on pasture.

Experimental data show that part-Brahman calves weighed 91 pounds more at weaning time off grass than highly bred calves of the British breeds under the same conditions. This increased weight, together with a slight increase in selling price, enabled the part-

Brahman calves to bring a greater gross return of approximately \$6 per calf. In dry-lot fattening the part-Brahmans compared favorably with highly bred beef calves in fattening periods of 150 days or less, but for longer periods they were not so satisfactory, making smaller gains and using more feed per unit of gain. Part-Brahman cattle, however, were usually superior in dressing percentage and this usually offset the higher carcass value of the non-Brahmans.

The foregoing observations of the comparative performance of purebred beef cattle and Brahman crossbreds indicated the possibility of developing beef cattle still more adaptable to the area and more acceptable to the meat trade than any yet produced. About 3 years ago, in the hope of developing a crossbred having a small percentage of Brahman blood and the polled characteristic, solid color, and beefy conformation of the Aberdeen-Angus breed, the Department began a project at Jeanerette, La. Here purebred Aberdeen-Angus females were bred to a purebred Guzerat bull. More than 83 percent of the first generation of calves were black in color, but all the bull calves had either horns or scurs and 73 percent of the heifers showed signs of horns. The conformation and color of the first-generation crossbred Guzerat-Aberdeen-Angus offspring (fig. 6) have been rather satisfactory, being superior to those produced in the early experiments with Brahman bulls and Hereford and Shorthorn cows. Four first-generation heifers were bred to an Aberdeen-Angus bull with the result that the next generation of calves (one-fourth Guzerat and three-fourths Angus) were 100 percent polled and 100 percent black.

Africander Cattle Being Bred Pure and in Crosses

The desire of cattlemen in southern Texas to import additional foreign cattle, developed under semitropical conditions, to cross with their

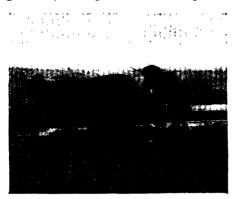


FIGURE 7.—Two-year-old purebred Africander heifers 1 year after arrival in the United States.

beef breeds and the impossibility of importing more Brahman cattle because of quarantine restrictions, led to an importation of Africander cattle. The Bureau of Animal Industry cooperated in this undertaking by furnishing the writer's services for selecting the cattle and handling the importation from Africa to the United States.

During October 1931, 16 bulls and 13 females of the Africander breed were selected in the Prov-

inces of Transvaal, Orange Free State, and Cape of Good Hope, in the Union of South Africa. The cattle arrived at New York in December, were quarantined for 90 days, and sent to the King and Kenedy reaches at Kingsville and Serita Tex respectively.

ranches at Kingsville and Sarita, Tex., respectively.

The cows and heifers of this importation (fig. 7) have been bred each year to purebred bulls of the same breed, to increase the number of purebred Africanders. Every female in the original importation

has proved to be a breeder, the older cows having produced calves

each year since their arrival.

The Africander bulls, in addition to their use as sires of purebreds, have been used extensively in crossbreeding experiments with Shorthorn, Hereford, Devon, and Brahman cows on ranches in southern Texas. Several hundred crossbred calves have been produced from these matings. The crossbreds from the Shorthorn cows have been very promising as calves and yearlings. They have excellent beef conformation, being deep, wide, and smooth, and are of a deep-red color. Crossbred calves from the Hereford cows have shown great uniformity in type, conformation, and color markings, and have responded well to feeding in the dry lot. Their gentleness in the feed lot, as compared with other breeds and crossbreds having Brahman blood, was particularly noticeable. In the crossbreds having Africander blood, there has been a degree of smoothness not found in the crossbreds carrying Brahman blood.

Polled Crossbred of Beefy Type Sought

At Jeanerette, La., the Department is testing a cross resulting from the use of Africander bulls with Aberdeen-Angus cows. Ten choice registered Aberdeen-Angus heifers and two purebred red Aberdeen-Angus females—red color being unusual in this breed which is typically black—were bred during the summer of 1934 to an Africander bull, in the hope of developing and fixing a polled type of crossbred that will be beefy and of a desirable color, either red or black.

Although cattle with either Brahman or Africander blood may not have a commercial place in many of the important beef-production areas, their hardiness and ability to utilize the southern grasses near the Gulf coast advantageously make the studies here outlined of interest to producers in that section and in regions where droughts are frequent. Brahman and Africander cattle were developed in countries where grazing conditions were extremely poor and watering places often far apart.

It must be kept in mind, however, that nothwithstanding the merits of Indian and African cattle the characteristics which are most sought after in the desirable beef carcass probably can be obtained best by using a predominance of blood of beef breeds of British origin.

W. H. Black, Bureau of Animal Industry.

BERRY Breeding Has Made Available Some Valuable New Varieties

Up to the present time 7 new varieties of strawberry, 2 of raspberry, 1 of of blackberry, and 1 of gooseberry have been introduced as a result of

the breeding work of the United States Department of Agriculture. The Blakemore strawberry, introduced 5 years ago, is a superior general-market variety for the South which is especially desirable for use by preservers. About 10,000 acres of this variety fruited in 1934. The Southland is a high-quality home-garden variety for the South, the Redheart a canning and freezing variety for Oregon and Washington, the Bellmar a handsome general-market sort for Maryland and New Jersey, and the Dorsett, Fairfax, and Narcissa very high-quality market and home-garden sorts, Dorsett and Fairfax for the

region from Maryland to southern New England and west to Kansas and Nebraska, and Narcissa for Oregon and Washington (fig. 8).

Strawberry breeding is being continued to develop high-flavored, firm, commercial varieties for the South, late commercial varieties for the North, canning and preserving varieties for the Northwest, root-rot-resistant varieties, etc. Over 1,000 selections from hun-

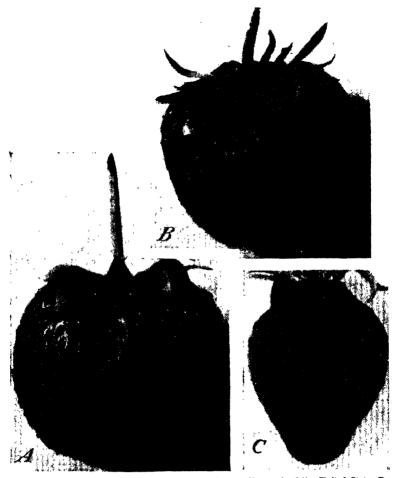


Figure 8.—Three of the new strawberries originated in the breeding work of the United States Department of Agriculture: A, Fairfax, a sweet, highly flavored table berry; B, Dorsett, a slightly more tart, highly flavored table berry; C, Blakemore, a tart, general market and preserving variety.

dreds of thousands of seedlings are being tested for their value for

such purposes.

The Potomac purple raspberry has been introduced as a hardy canning and preserving variety relatively resistant to leaf spot and anthracnose (fig. 9). The Van Fleet, a hybrid between an Asiatic wild raspberry and the Cuthbert red raspberry, has been introduced for southern regions as a home-garden sort. Other Asiatic wild rasp-

berries are being hybridized with red, black, and purple sorts in an attempt to get kinds adapted to the Southern States. One of these recently hybridized sorts is a trailing red raspberry which succeeds several hundred miles south of the present commercial raspberry regions and which is resistant to the common serious diseases.

The Brainerd blackberry is a hybrid of the Himalaya, a European blackberry, and an American erect blackberry, and is a productive variety of high quality which is adapted to regions from North Carolina to Maryland and west to the Pacific coast. It ripens about a month after American blackberries. Other blackberry selections similar to the Brainerd are being tested. Breeding work is also

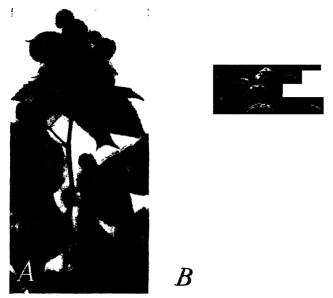


FIGURE 9.—A, Cluster of the Potomac purple raspberry, a hardy preserving and canning sort; B, a quart of the Potomac.

under way with selections of the native wild blackberry of the Pacific coast from which the Logan is derived.

> G. M. DARROW and G. F. WALDO, Bureau of Plant Industry.

Various Tests Indicate

LANKETS Vary Widely Many homemakers want more defiin Desirable Properties, nite facts than are now available on the quality of the goods offered on the retail market. Accordingly, the

Bureau of Home Economics has been testing some of the staple textile materials. A study of 30 household blankets purchased in retail stores has been carried on this past year.

An effort was made to decide what qualities the consumer desires most. This varies with different articles. In the case of blankets, warmth and durability are usually given first consideration.

The warmth of a blanket depends upon how much it will resist the passage of heat and air. In textile laboratories heat transmission is determined by measuring the amount of heat required to maintain a disk at body temperature when it is covered by a piece of the blanket and the other side of the sample is exposed to air at room temperature. The results are reported as the number of calories per second that will pass through 1 square foot of blanket when there is a temperature difference of 1° C. between the upper and lower surfaces of the fabric. Thus the lower the heat transmission, the better insulator the blanket will be.

As is shown in table 1, the heat transmission of the 30 blankets tested varied greatly. In the group of 25-percent wool blankets, one transmitted 0.081 calories and another 0.142 calories, almost twice as much. The differences within this and other groups were due of course to the construction of the fabric and the different amounts of napping.

Table 1.—A summary of some of the physical properties of 30 blankets

	Composition		yard		Thread count		por Jo u	calo- econd cubic	cubic pound ree
Composition and blanket	Wool	Cotton	Weight per square yard	Thickness	Warp	Filling	Breaking strength c filling grab method	transmission per ° C. per s square foot	Air permeability cubic feet per minute per square foot per pound pressure difference
All wool: A B C D E F G H J J Wool and cotton (household): L N O P Q R 8 T U	100. 0 99. 5 100. 0 100. 0 99. 6 100. 0 100. 0 100. 0 100. 0 100. 0 80. 4 83. 9 46. 4	Percent 0 0 0.5 0 0 0.4 0 0 0 0 0 19.6 16.1 53.6 74.0 74.0 75.3 83.5 94.4	Ounces 14.9 14.1 13.0 12.5 12.1 11.2 10.4 8.6 8.5 8.4 14.7 12.2 11.6 12.6 12.8 8.6 9.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8	Inches 0. 132 .172 .126 .149 .143 .137 .146 .122 .093 .086 .085 .180 .144 .141 .146 .072 .072 .086 .130 .086 .085	26. 7 34. 0 25. 5 31. 5 29. 0 24. 1 30. 0 24. 1 39. 5 35. 0 37. 4 38. 0 37. 4 38. 5 38. 5 38. 5 38. 5 38. 5	18.3 25.5 34.0 26.9 28.0 23.1 33.3 24.9 30.7 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 25.3 31.3 31.3 31.3 31.3 31.3 31.3 31.3 3	Pounds 50.4 18.8 14.0 9 21.5 4 10.9 12.4 10.9 12.4 7 4.8 4 34.7 7.6 20.7	0. 060 .057 .074 .051 .059 .063 .059 .108 .117 .099 .064 .059 .078 .081 .111 .112 .081	85 69 122 95 106 94 155 119 147 165 115 115 115 116 146 114 114 100 83 95
Cotton: V W		92. 2 97. 7 98. 8 100. 0	9.4 11.1 7.6 4.6	.108 .124 .088 .040	34. 2 44. 9 41. 6 27. 1	32. 0 34. 6 27. 7 24. 9	19. 2 21. 1 9. 6 11. 0	.095 .094 .084 .141	105 71 80 147
Camp: 1 2 3 4 5		18. 9 38. 3 41. 4 50. 7 70. 6	12. 2 12. 4 14. 8 19. 1 12. 6	.082 .097 .118 .150 .087	19. 5 22. 7 37. 7 23. 0 22. 0	15. 7 20. 0 35. 0 27. 8 19. 0	10. 5 18. 9 23. 8 33. 6 25. 6	.113 .123 .097 .084 136	64 59 44 44 46

Measuring the Air Permeability

The air permeability of a fabric is a very different property from its heat-insulating power. A blanket may be warm in still air but offer little protection in a drafty place or out of doors. The per-

meability of a fabric to air is measured by reading the pressure drop across the sample and across a calibrated orifice (a circular opening) when air is drawn through the fabric and the orifice. It is expressed as the number of cubic feet of air that will pass through 1 square foot of fabric in 1 minute when there is a pressure drop of 1 pound. Of two blankets with the same heat transmission, the one with the lower air permeability will be the warmer. The air permeability of the camp blankets tested varied from 44 to 64 cubic feet while those for the household blankets ranged from 69 to 176 cubic feet. Household blankets do not need to be so resistant to moving air since they are generally used indoors and with a sheet or other cover.

The durability of a blanket depends on its resistance to abrasion and its breaking strength. There is no standardized abrasion test. The breaking strength is measured by the number of pounds (pull) required to break 1 inch of the fabric. Table 1 shows quite a range of values for this property. For example, among the all-wool blankets, one had a filling strength of 52 pounds and another only 11 pounds, with the rest scattered in between. Similarly the 25-percent wool group ranged from 5 to 35 pounds in the filling breaking strength.

Blankets generally are weaker in the filling direction than in the warp because the filling yarns have been brushed up to form the nap. Therefore, only the breaking strength of the fabric fillingwise is reported, since after all a fabric or any other material is only as strong as its weakest point. All blankets are napped, some more than others. but the construction must be such that raising the nap will not seriously injure the foundation fabric. Close, loosely twisted filling yarns made of long fibers give a durable nap that will not pluck off easily or come off when laundered. The thread count or number of threads in 1 inch indicates the closeness of weave.

The weight per square yard of the blanket is also significant to the purchaser, since, if the fibers are the same kind, this is a way of telling how much fiber is being obtained for the money expended. All-wool blankets weigh from 8 to 15 ounces per square yard and 25-percent wool from 7 to 12 ounces. The warmth and durability are dependent on weight. As shown in the table, blankets I, J, and K, which are much lighter in weight than the other eight all-wool ones, transmitted much more heat, in some cases twice as much. The air permeabilities were also high. A desirable all-wool blanket has a minimum weight of 12 ounces per square yard.

The thickness was measured with a gage known as a compressometer which measures the thickness while there is a definite pressure on the fabric. The 30 blankets analyzed varied as much in thickness, thread count, and air permeability as they did in heat transmission, breaking strength, and weight.

MARGARET B. HAYS. Bureau of Home Economics.

OTULISM is a Factor in the Decrease of Western Waterfowl

In these days of apprehension regarding the welfare of our wild waterfowlwhen added restrictions are being placed on hunting and there is increased activity

in refuge establishment and in the restoration of former aquatic environments—the losses due to disease must not be overlooked. sons who have witnessed serious outbreaks of botulism among ducks in the West are already alarmed on this score, but many sportsmen and conservationists of the East, where the malady does not occur in its devastating intensity, do not yet realize the extent of waterfowl losses from this cause.

It was in 1910 that the western duck sickness, now known to be a form of botulism, first struck with unexpected violence at Great Salt Lake, Utah, and left in its wake literally hundreds of thousands of dead waterfowl and shore birds. The sheer intensity of this early epizootic has never since been equaled, although certain outbreaks of ensuing years have been strongly reminiscent of that early catastrophe, and the aggregate losses of western bird life from this one malady can truthfully be said to be in the millions.

Even as recently as October 1932 a serious outbreak at the north end of Great Salt Lake left dead waterfowl on the south shore of Willard Spur in numbers varying from 8,000 to 10,000 to the linear mile (fig. 10). It was estimated that fully 250,000 birds perished from

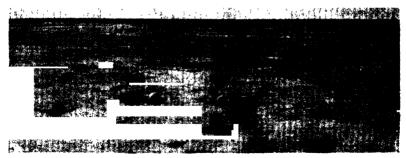


FIGURE 10.-Duck-sickness casualties on the shore of Willard Spur, Utah, in 1932.

this form of botulism in this general area in that year. Only 3 years earlier (1929), losses, estimated to be from 100,000 to 300,000 birds, occurred at the mouth of the Bear River nearby. In 1925, 100,000 waterfowl and shore birds died at Lake Malheur, Oreg., and that same year in northern California from 25,000 to 50,000 succumbed at Tule Lake. Earlier reports (1912) tell of 30,000 birds actually being picked up on the Weber River flats, Utah, and more than 44,000 gathered and buried on the grounds of one Utah duck club between August 22 and September 21 of that year. Even from Canada have come reports of tens of thousands dying at certain lakes in years of severe outbreaks. Such cases, are of course, extreme and fortunately are not of annual occurrence, but some birds perish from this sickness each year at all the principal points of infection, and when circumstances conspire to aggravate the menace, the mortality may become a matter of national concern.

Geographical Range of Botulism

The range of botulism as an epizootic among wild birds conforms roughly to that of the alkaline waters and soils of the West. It extends from points in Saskatchewan and Alberta to the Mexican border and beyond; and from lakes in the eastern part of the Dakotas, southwestern Minnesota, western Nebraska, and the Panhandle of Texas, west to southern Oregon and the warm valleys of California. Within this range during the past 20 years the malady has appeared at an everincreasing number of localities. Places where it had not previously been recorded may suddenly become the scene of pronounced mortality. Whether this is indicative of actual spread of the causative organism, or whether an increasing number of favorable environments are being created through changes in water conditions, is not clear, but there is no doubt that the likelihood of western waterfowl encountering areas of infection has increased perceptibly during the past two decades.

Correcting earlier concepts (according to which the malady, then called "western duck sickness", was considered to be a direct intoxication by alkali), recent studies by the Bureau of Biological Survey have shown the disease to be of bacterial origin. The micro-organism involved, technically known as Clostridium botulinum, type C, is an anaerobic saprophyte, thriving and producing under suitable conditions a powerful toxin to which most birds and some mammals are susceptible. The essentials for the bacterium's growth and toxin production in the field are quantities of dead organic matter, animal or vegetable, stagnation, reasonably high temperatures, and an alkaline (as opposed to an acid) environment. These conditions frequently are met in the West, where alkaline mud flats or shallow-water areas may contain quantities of dead organic matter in the form of the bodies of innumerable entomostraca, insects, mollusks, and other creatures, large and small. Dead vegetable matter also, including even grain from the season's crop, has shown to be a medium for toxin production when submerged in stagnant pools of alkaline water.

This disease is in fact nothing more than a form of food poisoning, and the likelihood of its occurrence is dependent primarily upon conditions affecting the welfare of a micro-organism, rather than on a weakened or predisposing condition of the victim. The number of species of North American wild birds known to have been affected by botulism under natural conditions totals 69, in 21 families, but it is the puddling duck or probing shore bird that, by reason of its feeding habits, is most likely to encounter and ingest the toxin. The browsing goose or the fish-eating tern, for instance, though susceptible, is less

likely to contract the malady.

Many bird victims of botulism may be saved by removing them from infected areas and providing them dry and wholesome quarters in which to recuperate, but under field conditions there is little hope for individuals that have taken lethal doses.

Method of Combating the Malady

Since botulism, as an epizootic among wild birds, is essentially dependent on the existence of an unwholesome feeding environment, the most effective and lasting method of combating the malady lies in altering conditions affecting the water areas concerned. There

may be means yet to be discovered whereby this can best be done. but at present there are two ways: Either by draining and drying the infected area to the point where it will be wholly unattractive to waterfowl and unproductive of duck foods; or, better, by maintaining deep and stable water depths. By the latter means temperatures are lowered, the possibility of toxin formation is reduced, and any toxin that has been evolved will soon be dispersed or diluted to the point of harmlessness. The efficacy of water handling has been demonstrated many times and is the basis of the provisions made for waterfowl at the extensive Bear River Migratory Bird Refuge maintained by the Bureau of Biological Survey in Utah. of the conditions favoring botulism in many cases has been the diversion of water for irrigation and other purposes, with the result that water and marsh areas that once maintained reasonably constant levels during summer, have been subject to great fluctuations in water depth and have often exposed extensive mud flats during periods of high temperature. Such conditions must be remedied to prevent botulism from continuing to take, perhaps increasingly, its annual toll of western waterfowl.

E. R. Kalmbach. Bureau of Biological Survey.

BROWN-TAIL-MOTH Control Work Under C. W. A. Greatly Reduces Abundance of Pest

The brown-tail moth was first found in the United States in Somerville, Mass., in 1897. It spread rapidly into all the New

England States, and also into Canada, and became so injurious and obnoxious that its suppression became imperative. Since that time work has been carried on to keep this pest under control. The work has consisted chiefly in destroying the silken webs in which the caterpillars spend the winter, although spraying in June or July and the introduction of parasites that keep the insect in check in its native habitat, Europe, as well as quarantines, have also been of value. As a result the abundance of this pest has been greatly reduced, and for the past 10 years it has been found only in Massachusetts, Maine, New Hampshire, and Vermont.

In the summer of 1932 the larvae of this insect were unusually abundant, particularly in Maine and New Hampshire, but control measures were not applied so generally as usual. In 1933 large areas of orchards and ornamental and shade trees, and in some sections forest trees, were completely defoliated. Conditions were such that numerous complaints were made by residents, and localities frequented by summer visitors suffered from loss of business. After the foliage had dropped in the fall, it was evident that the infestation was unusually serious, and in many sections the trees were literally loaded with the winter webs of the pest. There was every indication that if nothing was done the insect would be so abundant in the summer of 1934 that greater areas would be defoliated and that heavy migration of the moth would result in spreading the insect to uninfested territory, possibly beyond the New England States. The urgent need for action was evident. It was believed that with adequate financial support and a properly organized campaign the pest could be brought under control and a beginning made in exterminating the insect.

C. W. A. Project Approved

On December 1, 1933, a Federal project was approved by the Civil Works Administration for the States of Maine, New Hampshire, Vermont, and Massachusetts, to be administered by the Bureau of Plant Quarantine, United States Department of Agriculture, in cooperation with the State entomologists and the moth superintendents in the cities and towns. An expenditure of \$870,850 was authorized, and the work was organized as rapidly as possible.

It was necessary to close this work on February 15, 1934, and because of the time required to organize it, and the severity of the weather and heavy snowfall throughout most of the territory, it was not possible to complete the project as planned. The total expenditures were \$514,443.47, which was 59 percent of the funds available, and 67 percent of the work that was planned was completed. employment of 5,000 men was authorized and the average number employed during the period was 4,506. Nearly 98 percent of the funds



FIGURE 11.-C. W. A. workers cutting brown-tail moth webs near Concord, N. H., January 1934.

expended were paid for wages, and employment was given to many men during a portion of the year when no other work was available. As a result of this work 29,144 miles of roadsides with adjoining farms and home grounds, including a total of 22,836,530 trees, were examined. On these trees 19,954,249 webs were cut and burned, and

it is conservatively estimated that these contained more than 1.500,-000,000 caterpillars. A total of 183,364 worthless infested trees were removed and burned, more than half of them being wild cherry and a large portion of the others old apple trees of no commercial value.

Heaviest Infestation in Maine and New Hampshire

By far the heaviest infestation was found in Maine and New Hampshire, more than 19,000,000 webs having been destroyed in these two States (fig. 11). In Vermont the insect was found in all towns bordering the Connecticut River as far north as Barnet, and it would probably have been discovered in adjoining territory if the work had been

continued longer.

In Massachusetts, owing to the work that has been done annually in the towns, infestation on the whole was not alarming. In some towns there were notable increases in the number of webs found over these reported by the local authorities for the previous year. This condition was due in many cases to a curtailment of the control work during the previous year or two owing to the lack of financial support.

The abnormally cold weather during the winter caused heavy mortality of the small larvae in the webs in some sections of the territory, and thus aided in the reduction in the abundance of the insect. Conditions in the territory in 1934 show remarkable improvement over those of the previous year. There was some injury to foliage during the summer by caterpillars that survived in scattered areas, but it is believed that a comparatively small number of webs have been formed on the trees to carry the species through the winter.

The activities under the C. W. A. project clearly show the benefits that may be obtained by the collection and destruction of webs. The accomplishments also support the belief that intensive work over the infested area with trained personnel, followed by thorough reinspections for several seasons, will eliminate this insect from the United

States.

A. F. Burgess, Bureau of Entomology and Plant Quarantine.

BRUSH Fields Treated Before On thousands of acres of old burns Planting so as to Insure new crops of trees have never started and conditions give little promise of tree growth coming in naturally. These areas have grown up to brush species which are

practically valueless for forage because of impenetrability and low palatability, and are extremely hazardous from a fire standpoint. Once a fire starts in them it is hard to control, and is very likely to burn into valuable adjacent timber. The value of these brush fields in control of erosion depends upon slope and texture of soil.

Ordinary methods have not proved satisfactory in planting such areas. The dense brush hampers the progress of the planters and makes planting difficult. Survival is poor, for the root systems of the brush make almost complete use of plant food and water in the soil, and small mammals which inhabit the brush feed



FIGURE 12.—Tractor working a second time through a cleared strip.

voraciously upon the young planted trees. Any treatment that will



FIGURE 13.—The tractor pushes up a pile of dirt as it completes the clearing of a strip.

insure the establishment of tree growth on these brush fields at a reasonable cost is desirable (fig. 12).

During the past few years the need for heavy motorpowered road equipment has developed the tractor trail builder, which has been found practical for preparing brush-field areas for planting. The tractor trail builder consists of a moldboard cutting edge about 8 feet long mounted on the front of a caterpillar-type tractor. This blade can be lifted and lowered by the operator by hydraulic power. The machine will clear strips approximately 6 feet wide through dense brush at the rate of from ¼ to 1 mile per 8-hour

In these cleared strips, trees can be planted by ordinary methods (fig. 13).

Planting on Cleared Strips

shift.

During the past 3 years a few of these cleared strips have been prepared and planted annually in a large brush field on the Lassen National Forest in California. A check plot through which no strips were cleared was also planted. The strips were cleared by lowering the blade of the trail builder so that its cutting edge barely penetrated the surface of the soil. This broke up the root crowns and cut off the brush without pushing too much soil out of the strips. Brush was not cleared between these strips. The width of the uncleared space between cleared strips varied from 20 to 30 feet. Ponderosa pine and Jeffrey pine of the 1-1 age class were planted in these cleared strips and the check plot. The standard 8- by 8-foot spacing was used in planting the check plot. The trees were planted in the center of the cleared strips at intervals of 6 feet. In both cases the open-hole method of planting was used. The total cost of planting in the cleared strips (including strip preparation, planting, and cost of trees) amounted to approximately 6 cents per tree. The total cost of planting in the check plot was approximately 4½ cents per tree. On a larger scale operation the total cost of planting in cleared strips could be reduced to about 4 cents per tree.

The trees planted in the check plot were a 100-percent loss. Between 75 and 80 percent of the trees planted in the cleared strips are growing. Very little of the brush has started sprout growth in the cleared strips. Rodent damage to the planted trees has been very severe, varying from some nipping to the total cutting off of the top in at least 50 percent of the surviving trees. Practically all damaged trees, however, are making rapid recovery. Rodent-control measures are being carried on in connection with the current year cleared strip-

planting work.

Under the N. R. A. program an allotment was received for preparation of brush fields on a larger scale. Three projects in different localities on the Lassen National Forest were selected, and 500 miles of the 6-foot strips will be cleared and prepared for plating. Eighteen hundred acres of dense brush field will be planted and with fire protection will be reclaimed for timber production.

C. W. Corson, Forest Service.

HINCH BUG Campaign Successful in Protecting Corn from First Brood

The chinch bug severely damaged small grains and corn in a number of the Corn Belt States in the summer of 1933, and the unusual abundance of

this insect during the summer and fall of that year indicated that even greater injury to susceptible crops could be expected in the spring of 1934. In anticipation of such an outbreak, both State and Federal agencies issued warnings and directions for control and urged the

proper planting of crops to avoid severe injury.

As was predicted, a very heavy infestation developed in small grains in the spring of 1934, particularly in Missouri, Illinois, Kansas, and Iowa. In some areas the barley crops were almost completely wiped out. The abundance of these insects in small grains indicated the probability of a heavy migration to corn. The need for control became more urgent in view of the losses due to drought and in order to make yields more certain on the reduced acreage, under the A. A. A. program.

To provide effective measures for chinch bug control in the extensive area infested, Congress appropriated \$1,000,000 for this purpose, and

the funds were made available on June 8, 1934.

The chinch bug has long been one of the most destructive pests in the Corn Belt of plants belonging to the grass family. Its abundance is closely associated with climatic conditions, outbreaks of great intensity usually occurring in periods of drought. The insect itself is small, scarcely one-fourth inch long when adult; but it occurs in such tremendous numbers that it may kill the plants on which it lives by sucking the juices. It hibernates as an adult in bunch grass, wood lots, and other suitable cover, from which it flies to small grains when the weather becomes warm enough in the spring. The eggs are deposited around the bases of the plants of barley, wheat, oats, rye, or similar crops. Under conditions existing last year, the eggs were frequently laid in cracks in the soil around the roots of the plants. Upon hatching, the tiny bugs feed on the small grains, passing through a number of molts, until the grain hardens and matures or is cut. Then, being wingless in this stage, they migrate on foot in search of succulent food plants, the most common of which are corn, sorghum, and Sudan grass, and there complete their development. The bugs generally acquire wings, further distribute themselves over corn and other green susceptible crops, lay eggs, and produce a second generation. This second generation may also cause serious damage.

Methods of Indirect Control

There are a number of indirect methods of control which may be utilized in fighting this pest, such as destruction of the bugs, by burning or otherwise, in their winter quarters, and the separation of small grains from corn by plantings of nonsusceptible crops, such as alfalfa, soybeans, clover, and various truck crops. There are, however, no known means by which the chinch bugs can be economically controlled in the small grains.

The only method applicable at the time the Federal appropriation became available was the erection of barriers to prevent the migration of the small bugs from the small grains to corn and similar crops. A number of types of barriers are in common use. Sometimes a dust furrow is maintained around the margin of the cornfield, in which a log is continuously dragged at the time of day when the insects are



FIGURE 14.—A crossote barrier against chinch bugs in a Kansas cornfield. The man is standing in the furrow looking into a post hole. The corn in the foreground was completely destroyed previous to the arection of the barrier.

migrating—usually in the forenoon and late in the afternoon. In this way the bugs are killed by crushing and by exposure to the hot sun and dry, heated soil. Dust barriers are occasionally also maintained by going around the field continuously with a harrow. The dust barrier is fairly satisfactory with continuous working except when rainfall permits the insects to cross the dusty area. By far the most satisfactory barrier is a chemical one, constructed by plowing a furrow between the field of small grain and that of corn to which the bugs are migrating, throwing the soil toward the corn, and placing near the top of the furrow on the corn side a line of coal tar or creosote, which the bugs will not cross (fig. 14). At intervals along the furrow post holes are dug, and into these the insects fall, where they may be destroyed with kerosene or calcium cyanide, or by burning. The effectiveness of this method depends upon the erection of the barrier previous to the beginning of the migration. At the time the Federal funds became available, rather extensive migration was already in progress in the central and southern parts of the Corn Belt

and speed was required to construct the barriers in time to save the corn.

Federal and State Cooperation

The appropriation was made on the basis of a cooperative campaign to be conducted by the Federal Government and the States involved. In conducting this campaign the Government purchased and delivered the creosote used for barriers and provided limited supervision of field activity in cases where this could not be provided by the States, and the States were responsible for local storage, handling, and distribu-

tion, and actual application of the materials.

In order to obtain maximum effectiveness from the materials supplied, an extensive organization of State and Federal workers was formed. The activity in each State was under the direction of a chinch bug control committee, representing the State agricultural college, the State department of agriculture, and other interested agricultural agencies. This committee appointed a leader to direct the campaign in the State. The county agents, working under the State leader and his assistants, were responsible for the distribution of the creosote to the farmers according to their requirements. Headquarters for the Federal activity were set up at Minneapolis, Minn.

A total of 6,041,536 gallons of creosote and coal tar was purchased and delivered to the infested States within a month, shipments having been largely completed by the end of June. During the second week in June from 300,000 to 700,000 gallons were shipped per day.

In the following States infestation was severe enough to require extensive control measures: Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, Oklahoma, and Michigan. The most serious and widespread infestations were in Illinois, Missouri, Iowa, and Kansas, and here they were well under way when the appropriation bill was passed. Migration in Ohio, Minnesota, and Michigan began somewhat later because of the later season and the less severe drought in these States.

The results of this campaign in terms of actual saving are difficult to estimate because of the extremely heavy losses from drought in the States affected. Excellent results, however, were obtained in preventing the migration of the first-brood bugs into the cornfields, except in a few cases where the small grains stayed green long enough for the bugs to become mature and to migrate to corn by flight. Approximately 53,184 miles of barriers were maintained, and State workers estimate that they saved at least 1,500,000 acres of corn from destruction. It must be recognized, however, that the barriers are effective only in controlling the first-brood migration to corn and, as indicated above, further spread may result from the flight of the second-brood bugs, which cannot be prevented by barrier construction. It must also be borne in mind that the method of control utilized in this campaign was primarily one of corn protection rather than of chinch-bug destruction, and large populations of insects survived the summer.

The most satisfactory control methods are those indirect means of avoiding infestation by destruction of hibernation quarters and by proper plantings to remove corn from close proximity to infested small

grains.

P. N. Annand, Bureau of Entomology and Plant Quarantine. ITRUS Byproduct Uses
May Greatly Influence
Fresh-Fruit Market

In the statistical section of this Yearbook will be found data showing the production of citrus fruits in the United States. These figures show

that production is increasing rapidly. The rate of increase is greater than that of population. This means that the demand must be extended by creating new markets or new uses. Foreign markets are being supplied in part by other recently developed citrus-growing areas such as Palestine, South Africa, and Australia. Canned grapefruit has created a market for itself which can no doubt be extended. Because of its less perishable nature it is better adapted for distant markets than fresh fruit. Why should the citrus industry limit itself to only one product in exploiting these markets?

Virtually Noncompetitive Uses Available

Some citrus products may enter into competition with fresh fruit while others will have uses so far removed that competition will not be felt. Under citrus products which may compete may be listed canned grapefruit hearts and juice, and canned orange juice. When such products go to new markets or into new uses there is no competition and they may even serve to create a demand for citrus fruits. Many people have learned to eat grapefruit because they tried the canned product and immediately liked its milder flavor. There is a second class of products such as marmalades and beverages which in no way

compete with the fresh fruit.

The Citrus Products Station of the Bureau of Chemistry and Soils at Winter Haven, Fla., has succeeded in developing on a laboratory scale a full line of alcoholic citrus beverages such as wines, brandies, and cordials. The wines are prepared by adding corn sugar to increase the sugar content of the juice to about 25 percent, inoculating with a pure culture of wine yeast, and allowing fermentation at a low temperature. The fermentation is followed by clarification and aging. Two distinct types of citrus wine have been prepared, one resembling a sauterne, the other a sherry. Brandies were prepared by distilling sugar, water, and oil from the peel of citrus fruits to citrus brandies. The results of this work point to the possible large-scale utilization of surplus and cull citrus fruits in the manufacture of products not in competition with fresh fruit.

These products are well adapted to large-scale manufacture at relatively low cost and to the utilization of surplus fruit not taken by other uses in that the quantity used in any single year can be adjusted to supply. Excess production of these products in a season of bountiful yield can be carried over to years of low yield with no deterioration but

actual improvement in quality.

The preservation of unfermented orange juice by heat has not become of such commercial importance as that of grapefruit juice because of the difficulties encountered in retaining the flavor of the fresh juice. Results obtained during the past 3 years indicate that flash pasteurization following deaeration is well suited for the production of a satisfactory commercial product. The method consists of cutting the fruit in half and extracting the juice from the halved fruit on slowly revolving ribbed cones. Because flavor changes are due primarily to oxidation, the reamed juice is immediately deaerated. This is accomplished

by exposing the juice in thin layers to a vacuum of about 28 inches, thereby removing a considerable quantity of the dissolved gases. Although deaeration is not complete, this treatment has been found highly beneficial. After deaeration, the juice is pumped through the flash pasteurizer, consisting of a coil of tin pipe whose walls are about 2 millimeters apart, and surrounded by a steam jacket. Here the juice is exposed to a temperature not higher than 205° F. for approximately 5 seconds. It is then immediately cooled to 160° and filled into the containers at this temperature. The closed cans are cooled in running water. The process is continuous, and the juice, after being extracted from the fruit, is sealed within the final container in about 5 minutes.

Flash-pasteurized grapefruit juice yields a product superior to that obtained by exhausting and then sterilizing as now generally practiced

on a commercial scale.

The criterion of the value of flash pasteurization rests on the stability of the product during periods of storage. It has been found that flash-pasteurized orange juice protected from high storage temperatures will retain an acceptable flavor for at least a year or even longer.

Both the alcoholic and the nonalcoholic types of citrus products have definite and promising commercial possibilities and thus will provide additional returns to the grower.

> H. W. VON LOESECKE and H. H. MOTTERN, Bureau of Chemistry and Soils.

OMMUNITY Values
May be Stabilized by
Sustained-Yield Forestry

The lumber industry in harvesting the virgin timber of the United States has created temporarily thriving industrial centers and prosperous

communities. Almost invariably, however, timber cutting on the area economically tributary to any one center has proceeded at such rate that the available supply has been exhausted in one, or at most in two generations. Cutting at a rate many times in excess of the

current annual growth has developed a migratory industry.

The "cut-out and get-out" system of harvesting forest resources means liquidation of lumber and logging companies, vanishing pay rolls, dwindling dependent industries, poverty-stricken dependent agriculture, and curtailment of transportation facilities. The community economy breaks down. Tax revenues fail, bonds become default, and social disintegration rapidly develops. Homes are abandoned and the population moves to some undeveloped field. This system of timber exploitation, "wilderness—boom town—ghost town", has been repeated wherever timber production has been an important factor in the industrial life.

It is entirely practicable and possible, however, for communities dependent on forest resources to attain raw-material-resource stability comparable to that enjoyed by agricultural communities close to large centers of population. But permanent stability can only be insured by annually harvesting a forest crop on the area tributary to any one center, equal to the quantity of timber grown on the entire area the same year. The annual growth on the average for the entire area must replace the quantity of timber cut. Sustained-yield forest management has as one major objective the maintenance of permanent

communities by securing an annual production adjusted to annual growth, or the sustained-yield capacity of the land.

Sustained-Yield Management in Northwest

Natural conditions in the Pacific Northwest are extremely favorable to the sustained-yield management of forest crops. Initial growing stocks are still available in many locations. The annual rate of growth is very rapid and yields per acre are large. The territory required to yield sufficient timber on a sustained-yield basis to maintain a prosperous community unit here is relatively small as compared with other sections of the country. The tree species are aggressive in reestablishing themselves after lumbering, where proper cutting methods are used. Adequate fire protection can be secured at reasonable cost. Douglas fir, the principal tree species, is very resistant to both insect and disease attacks. The simplest form of management can be practiced in most of the territory without impairment of the productive capacity of the soil or decrease of the annual growth rate per acre.

With the exception of a few communities dependent upon nationalforest sustained-yield units, practically none of the logging and milling industry of the Pacific Northwest is now on a sustained-yield basis.

The State of Washington ranks first in amount of timber cut, with Oregon second, the combined normal annual cut being about 10½ billion feet. It is estimated that approximately 65 percent of the pay rolls depend on the lumber industry. The indirect contribution in sustaining the railroad and other public facilities, as well as agricultural development, materially increases this amount. The community prosperity in both States is directly related to the lumber cut. A low cut indicates a depression.

On account of the location of large timbered areas within a reasonable rail haul of cheap water transportation, manufacturing facilities are concentrated and are the basis of the prosperity of the larger towns and cities, favorably located with respect to export markets and trans-

continental railroads.

Cutting in Washington and Oregon has been largely confined to areas tributary to good transportation facilities, especially to the Puget Sound and Columbia River territory where the quality of the timber is high. The original supply of timber was so large that highly industrialized and stable communities dependent upon this resource were developed. The sawmill industry utilizes chiefly old-growth Douglas fir, spruce, and cedar, and the cutting of stands of mixed species has resulted in a waste of usable material estimated at 2½ billion feet annually. With the exhaustion of this particular class of material, it is

generally recognized important changes will occur.

The original stand of privately owned coniferous timber in the Douglas fir area in Washington may be roughly placed at 450 billion feet. The resource survey recently completed by the Forest Service places the remaining quantity of private timber in this State at 123 billion feet, or about 27 percent of the original stand. There is 121 billion feet, in some type of public ownership, State or Federal. It is significant, however, that out of the total of 244 billion feet only 101 billion feet of old-growth Douglas fir, spruce, and cedar is left uncut. With a normal annual cut of some 6 billion feet, it is plain that the supply of material which is the basis for the present sawmill industry is not inexhaustible. The supply of pulp timber

still available is relatively in a much more favorable situation. Since the use of a thousand board feet of timber in the making of pulp and paper products utilizes the services of 5 men as compared with 1 man in the sawmill industry, the development of this phase of the industry may greatly prolong the life of the communities dependent upon forest resources. The possibility for sustained-yield units based on a production of lumber is greatly restricted by the cut-out condition of the original stands.

Conditions in Oregon

While certain sections of Oregon are in a condition comparable to Washington, there still remain large areas where sustained-yield units can be established. Agricultural lands are favorably located with respect to these forest areas. Some existing communities can be expanded and a permanent ideal combination of industrial and agricultural development attained. In some areas possibly new communities may be required. With approximately 28 percent of the remaining timber stand of the United States located in Oregon, considerable expansion is inevitable there. Each industrial center would include sufficient forest area to furnish the estimated annual supply of forest products. Permanent towns with better living conditions would be justified.

The choice when the vast timber stands of Oregon are exploited on a large scale, will be between a financially sound development which will sustain permanently a considerable population and a relatively high standard of living, or the exploitation of the timber resource on a boom basis with a flush period of prosperity followed by financial and

social wreckage.

F. H. BRUNDAGE, Forest Service.

OMPOSTS Are Good Means of Improving Soil of Small Farms

Composts offer a practical means of maintaining the soil fertility which is the most important factor in the successful operation of a subsistence farm.

The subsistence farm is usually small in area, which implies the necessity of having every square foot of it as fertile as possible in order to obtain maximum crops. Where there is an ample labor supply in the family, the preparation of composts and the securing of material for them may well be worked into periods which would not otherwise

be fully employed.

There is need here for intensive gardening, and the basis of building up the soil for this purpose is in most cases an adequate supply of humus. Because the area is too small to permit profitable use of green-manure crops, the homestead farmer must rely on manure and composts. As the question of cash involved is also important, it is advisable so far as possible to utilize materials which are at hand or easily secured. In most cases these materials have no cash value, but when properly composted contribute to the building up of the soil and bring increased crop yields.

There are available on practically all farms and gardens many materials which are useful for composts, although the farmer or gardener often fails to appreciate their value. Some of the common materials which are often wasted are leaves, straw, muck, vegetable tops, grass

clippings, and garbage material which is inedible for chickens or pigs. Where stock is kept, the manure from the cows, chickens, and pigs may well be worked into the compost heap, because, unless something of this character is put in, fertilizer chemicals will be needed to break down the compost, and these require an outlay of cash. With this in mind, the treatment of the farm animals may be modified to give greater amounts of material for composts. Larger amounts of bedding than are absolutely required may be used, and the use of superphosphate as a part of the absorbent of the manure is helpful. Superphosphate not only acts as a preservative of the nitrogen in the manure, but also builds up the phosphoric acid content of the mixture, and ultimately that of the compost.

Methods of Making Composts

There are a number of methods of making composts and the one chosen will depend on the materials available, the location, and the time which can be allowed for the compost to mature. An ordinary pile of leaves without treatment, if kept moist, will ultimately break down into humus, as in the case of forest litter and forest soils. Although this process may take several years in a forest, the breaking down of the compost may be hastened by methods which also improve its character. A small amount of lime added to the compost materials, together with a little manure, will speed up the breaking down of the inert material. The greater the amount of manure which may be put in, the better. If manure is not available, fertilizer chemicals may be added. These may be either a complete fertilizer mixture. high in nitrogen, such as one containing 7 percent nitrogen, 6 percent phosphoric acid, and 5 percent potash, or the separate materials may be added. A mixture recommended by the New York Agricultural Experiment Station at Geneva, N. Y., is sulphate of ammonia, 60 pounds: ground limestone, 50 pounds; superphosphate, 30 pounds; muriate of potash, 25 pounds; total, 165 pounds. This is sufficient to mix with a ton of straw or other waste material.

The straw or organic matter is spread out in 6-inch layers and treated layer by layer with the chemicals until the pile is 4 feet high. Each layer is wet as placed, and finally the pile is kept moist as decomposition occurs. In the warm part of the year decomposition may be thoroughly completed within 3 months. Other satisfactory mixtures are recommended by Missouri, Iowa, and other State experiment stations. Use of the mixtures recommended by the nearest experiment station is advised. In making up a compost pile it is customary to have the pile 5 or 6 feet wide and at least 4 feet high. with the length corresponding to the amount of material available. In this way the ideal condition of allowing the pile to be damp and not wet will usually operate in humid climates. It is not advisable to apply so much moisture that it runs through the pile as this will leach out soluble fertilizer compounds. On the other hand, if the compost is too dry, proper decomposition will not take place. In some cases it has been found convenient to make the compost in a concrete-lined pit or on a concrete floor. Where running water is available in ample amounts, a covered pit may be used effectively, as the moisture can be controlled under these conditions. However, the compost pile may be on the ground without any other protection than proper care in

Nitrogen Phosphoric Potash

seeing that the sides are more or less vertical and that the top is

depressed in the center to hold the water.

Material

When the compost is thoroughly broken down into a homogeneous mixture, and no undecomposed leaves or other material may be seen, it is ready for use. It may be broadcast and worked into the entire topsoil, if large enough amounts are available. With smaller amounts it is often better to put it in individual hills.

The use of composts will vary somewhat with the soils involved. They are very necessary in sandy soils and are also efficient in improving the mechanical condition of clay soils. On good loams, and on peaty soils, they are not so necessary, though useful. They are a substitutue for manure, when manure is not available, and extend the use of manure when small amounts are on hand. In fact, a mixture of manure and compost is almost as good as manure and will cover a much larger area. Composts also save part of the expense of chemical fertilizers and so improve the soil that the fertilizers give more efficient results.

Table 2 gives the analyses of some of the common materials which may be put into composts:

Table 2.—Percentage composition of some standard commercial fertilizing materials and other materials

PERCENTAGE COMPOSITION OF VARIOUS FERTILIZING AGENTS

Calcium cyanamid Nitrate of soda Urea	19. 0-22. 0 15. 5-16. 25 46. 0		
Superphosphate Treble superphosphate Ammonium phosphate Raw ground phosphate rock	13.0	16. 0-20. 0 44. 0 46. 0 26. 0-35. 0	
Ground bone (raw)	2.5- 4.5 2.5	20. 0-25. 0 23. 0	48. 0-52. 0 48. 0-60. 0
PERCENTAGE COMPOSITION OF VARIO	US MATE	RIALS	
Apple leaves	1.0	0. 15 . 02	0. 35 . 15
Banana skins (ash) Cantaloup rinds (ash) Castor bean pomace Cattail reed and stems of waterlily Coal ash (anthracite)	5.0-6.0	3. 25 9. 77 2. 0- 2. 5 . 81 . 1 15	41.76 12.21 1.0-1.25 3.43 .115
Coal ash (bituminous) Coffee grounds Corneob ash	2.08	.45	.45 .28 50.00
Corn (green forage) Crabgrass (green) Duck manure (fresh) Eggs Eggshells Feathers	.66 1,12 2,25		.33 .71 .49 .15
Fish scrap (fresh). Grapefruit skins (ash). Lemon culls (California).	2.0-7.5	1.5-6 3.58	30. 60 . 26
Oak leaves. Orange culls. Peanut shells.	.80 .20 .80	.35 .13 .15	.15 .21
Pigeon manure (fresh) Pigweed, rough Pine needles	4, 19 .60 .46	2.24 .16 .12	.03
Potatoes, leaves and stalks	. 76 1, 10	.15 .26 .25	
Dewage studge from inter deds	1 . 19		; , 49

Table 2.—Percentage composition of some standard commercial fertilizing materials and other materials—Continued

PERCENTAGE	COMPOSITION	OF VARIOUS	MATERIALS-Continu	han

Material	Nitrogen	Phosphoric acid	Potash
Soot from chimney flues	4. 15 4. 00 3. 70 2. 50 . 35 . 50	1. 05 4. 99 3. 29 .62 .50 .65 .90 .10 .15 1. 0- 1. 5	0. 35 18. 03 13. 89 . 40 6. 00 4. 50 7. 00 . 40 . 60 1. 0- 3 4. 0-10

FERTILITY CONSTITUENTS (PERCENT) IN DIFFERENT KINDS OF MANURE

Kind	Water	Nitrogen	Phosphoric acid	Potash
Sheep	59. 52	0. 768	0. 391	0. 591
Hog.	74. 13	. 840	. 390	. 320
Cow	75. 25	. 426	. 290	. 440
Horse	48. 69	. 490	. 260	. 480
Hen	56. 00	0. 8-2. 00	0 5–2. 00	0. 8 9
Rabbit	31. 4	1. 4	1. 8	. 5

The use of composts is one of the safest and most economical methods of building up soil productivity in small areas. This is shown by the fact that their use is world-wide and dates back many centuries. The agriculture of China, in spite of outstanding faults, has been kept going for centuries essentially by the proper use of composts. In almost any location there are materials available for the hauling which make useful soil amendments. This is especially true if the landholder is located near an industrial area or any large city.

C. C. FLETCHER, Bureau of Chemistry and Soils.

OSMETICS Mostly Harmless Women have used cosmetics But Sometimes Not, Tests since the beginning of time by United States Chemists Show

and will continue to do so.

Officials of the Food and Drug Administration have no concern with that. The food and drug enforcement officer does have a real grievance, however, when a tragedy occurs and lasting damage is done by the use of the rare cosmetic which is dangerous and he finds himself accused of callous disregard of human welfare in not having taken proper legal steps under the law to prevent the disaster. His grief, however, is mild compared with that of the victim of the occasionally dangerous article.

The truth, of course, is that there is no national law governing traffic in cosmetics. The present Federal Food and Drugs Act does not deal with these articles. The Food and Drug Administration has had occasion, however, to investigate a number of beauty preparations because they were sold not only as cosmetics; their labeling also bore claims of a medicinal character. When they bear such representations in their labeling, they become drugs within the meaning of the law and are subject to its provisions. The Administration has also had occasion to investigate a number of cosmetics to provide information to a congressional committee which, during the past session of Congress, considered revising the Food and Drugs Act to include cosmetics within its scope. Based upon the results of this investigation the Administration, through the proper official channels, recommended to Congress that the Food and Drugs Act be amended so as to prevent the sale of poisonous cosmetics and to require that claims made in the labeling and advertising of beauty preparations be truthful.

There is no doubt that most cosmetics are harmless. The fact remains, however, that there are on the market some beauty preparations which defeat their purpose by robbing their users of both beauty

and health.

Dangerous Eyelash Color

Lash-Lure is distributed throughout the United States for coloring eyelashes. Soon after its appearance on the market reports of severe injury were published in various medical journals. In Dayton, Ohio, a prominent club woman was made totally blind as a result of a single application by a beauty-parlor operator of this highly poisonous cosmetic. Analysis of the product showed that it contained an aniline dye which is extremely corrosive and capable of burning away the outer coating of the eye. Since the Food and Drugs Act does not prevent the sale of dangerous cosmetics, nothing could be done to stop the sale of the product except to issue press notices calling attention to the danger inherent in the use of this product.

Preparations for the removal of superfluous hair are not ordinarily extremely dangerous. Most of them contain corrosive sulphide salts. These same chemicals are sometimes used in the removal of hair from hides to be tanned. It is a scientific fact that anything corrosive enough to dissolve the hair is quite likely to be strong enough to damage the skin. Many cases of severe injury to the skin frequently followed by infections have been reported to be due to the use of these

depilatories.

A more dangerous type of depilatory agent was employed by a New York manufacturer in an article called "Koremlu," which sold for \$1.10 a jar. The attractive package was merchandised to people all over the country. It was not until some months after its initial sale that reports of severe injury began to be received. The product contained thallium acetate, a substance well known as a rat poison but for which there is no known antidote. It has the comparatively rare property of being absorbed through the skin. The case of a woman 30 years old who went to the Mayo Clinic, Rochester, Minn., suffering from impaired vision is typical of the ill effects brought about through the use of this cosmetic. She complained of aching and general soreness of all the muscles in her body along with general weakness. Later, other distressing symptoms appeared which kept her in bed about 2 weeks. Finally her aching progressed toward numbness and her eyesight was more seriously impaired. The serious poisonings reported as a result of the use of this product number several hundred. The firm finally discontinued business because of the many damage suits filed against it.

Lead acetate is another dangerous poison sometimes found in cosmetics, more particularly in hair dyes. The application of preparations containing lead may cause local injury to the skin and scalp. Lead is absorbed slowly but tends to accumulate in the system. The

result may be chronic lead poisoning with symptoms such as malnutrition, anemia, painful joints, sore gums, defective vision, and

sometimes even more serious symptoms.

Arsenic has been found to be an ingredient of some hair tonics. The dangers of its continued use are too great to make it wise to offer it in cosmetic preparations.

Mercury Salt in Freckle Creams

Freckle creams and skin bleaches are frequently found to contain a mercury salt. While this substance is entirely capable of lightening the color of the skin, the dangers inherent in its use are great indeed. It may cause acute eruption of the skin. Its continued use over a period of years is entirely capable of producing chronic mercury poisoning, since the skin readily absorbs this substance. The absorbed mercury may damage the kidneys and ulcerate the mouth and gums and cause other serious injury.

In the case of those substances which cause chronic poisoning after prolonged use for a number of years, the person using the cosmetic seldom associates her disease condition with the use of the cosmetic. This is because the injury occurs a long time after she started its use and also because the injury may manifest itself in some entirely different part of the body than that to which the cosmetic was

applied.

Fat-reducing preparations are perhaps not ordinarily considered in the category of cosmetics, but since they are consumed so widely for the purpose of improving the personal appearance they can logically be discussed here. The most commonly sold antifat preparations can be classified roughly in three groups. In the first group are those which produce their effect by starvation. In this category fall those preparations which contain nothing but wholesome food substances pleasantly flavored but which usually are sold in small containers for a dollar or more. The directions ordinarily accompanying articles of this sort instruct the user to dispense with breakfast and lunch and replace these meals with a glass of liquid made by dissolving a teaspoonful or so of the product in a glass of water. Obviously if a person decreases the food consumed, a reduction in weight will almost inevitably result.

The second group of fat-reducing products includes those which contain powerful laxative drugs. They may have some limited fat-reducing action by rushing the food through the body so rapidly that it does not have an opportunity to be digested and absorbed. The continued use of purgative drugs is not calculated to improve the health of the user. On the contrary, serious injury may result.

Thyroid Extract in Some Reducing Drugs

The third group of weight-reducing products includes those which stimulate the fat-burning properties of the body to the point where an actual utilization of the fatty tissue is brought about. Drugs in this class include thyroid extract, and a more recently exploited substance, dinitrophenol. These substances are extremely dangerous and have caused a great deal of serious harm. They should never be used except under the direction of a competent physician who carefully observes their effect.

Since the Federal Food and Drugs Act does not now have jurisdiction over products of this type, dangerous though they may be, all that the Food and Drug Administration can do at present is to warn the public that they are dangerous.

George P. Larrick. Food and Drug Administration.

REDIT Facilities for As a result of the break-down of the Agriculture Greatly usual credit sources and of the intensi-Improved by New Laws fication of adverse economic conditions, the credit problems of agricul-

ture had become extremely acute even prior to the banking holiday of 1933. To bring about an improvement, a unified and comprehensive Federal credit system for agriculture was put into operation. This brought about a substantial expansion in the lending activities of the Federal land banks and of the Federal intermediate credit banks. Two groups of new lending institutions were established to meet the agricultural needs for production credit and for credit for cooperative associations. Refunding of maturing loans on a longterm amortized basis at lower rates of interest, and efforts devoted to debt conciliation and adjustment, enabled large numbers of farmers to retain farm ownership and to reduce their annual fixed charges for interest.

In the 3-year period prior to the banking holiday the number of farm foreclosures increased at an alarming rate, and forced a sharp reduction in the total of outstanding farm-mortgage loans. The number of forced sales per 1,000 farms, excluding sales for delinquent taxes, increased from 15.7 in the year ending March 15, 1930, to 28.4 in 1932 and 38.8 in 1933. These sales represented not only foreclosures but a large proportion of sales in which the ownership of farms was transferred to creditors for the purpose of escaping the burden of an excessive indebtedness.

These conditions indicated clearly the necessity of more adequate credit facilities to arrest the wave of foreclosures. Legislation, therefore, was enacted which enabled the Federal land banks and the Land Bank Commissioner to make loans for the refinancing of a large volume of the maturing indebtedness and to prevent the unwarranted loss of farms in those cases where the farmer with adequate financial accommodations, and in certain cases with some concessions from his creditors, could work out of his credit difficulties.

Advances Under Emergency Farm Mortgage Act

Under the new loan provisions of the Emergency Farm Mortgage Act of 1933, the Federal land banks advanced approximately \$933,-000,000 (May 1, 1933, to Feb. 28, 1935) on first farm-mortgage loans. Loans made by the Land Bank Commissioner, about one-half of which are supplementary advances to those made by the land banks, amounted to an additional \$675,000,000, raising the total to \$1,608,-000,000. This amount, loaned to approximately 437,000 farmers, has been the means not only of saving farms from foreclosure but has also resulted in refinancing the farmers' indebtedness upon a sounder long-term basis more in keeping with the debt-paying capacity of the individual farm.

Prior to the passage of the Emergency Farm Mortgage Act of 1933 probably not more than 25 percent of the total farm-mortgage debt was repayable on a long-term amortized basis. A large percentage of the farmers who had short-term mortgage loans falling due during the last few years found it difficult to obtain renewals because of the decline of land values and the generally disorganized economic conditions. Farmers who are refinancing their indebtedness under the new Federal program will hereafter not be confronted with the problem of loan renewals. The expense, as well as the uncertainty, involved in the frequent renewals of short-term mortgages also will be eliminated.

A further advantage of this refinancing program is a reduction in the interest paid by farmers on their mortgage indebtedness. For a 5-year period the interest rate on Federal land bank loans is reduced to 4½ percent per annum. A survey conducted by the Farm Credit Administration indicates that the average rate of interest paid on the indebtedness refinanced through Federal land bank and Land Bank Commissioner loans has been 6.4 percent. The new basis of financing, therefore, represents an annual saving of approximately one-fourth of the interest charges. The reduction in fixed charges through lower interest payments, together with the reduction in taxes that has taken place, should help materially to put the individual farmer

on a stronger financial basis.

In addition to providing for these reductions in interest charges, the Emergency Farm Mortgage Act also made it possible for the Federal land banks to extend delinquent unpaid installments of loans at the request of borrowers during the 5-year period ending July 1938. Up to June 30, 1934, nearly \$50,000,000 of unpaid balances of matured items, consisting mostly of interest and principal of installments and cash advances for taxes, had been extended. The Emergency Farm Mortgage Act also authorized the Federal land banks to defer until July 1938 the principal portion of maturing installments on loans in good standing. To relieve the Federal land banks of any burden from extensions and deferments granted, Congress authorized that extensions and deferments in force may be used by the banks as a basis for paid-in surplus claims from the United States Treasury.

Financing by Non-Federal Agencies

The volume of new mortgage loans made by non-Federal agencies has been relatively small and, with the repayment of loans refinanced through the Federal-sponsored agencies, the outstanding volume of loans held by private agencies has continued to decline. As a result of this fact and of the enlarged lending operations of the Federal land banks and the Land Bank Commissioner, the Farm Credit Administration has now become the most important agency holding farm-mortgage loans. As of August 15, 1934, they held approximately 30 percent of the total farm-mortgage debt compared with approximately 20 percent for life-insurance companies, formerly the largest owners of farm-mortgage loans.

Prior to the enactment of the new farm-credit legislation, the facilities available to farmers for short-term and intermediate credit had become seriously disrupted. The banking holiday of 1933 brought to a

culmination a series of bank suspensions which in every year since 1921 had impaired farm-credit facilities. In numerous communities no banking facilities whatsoever existed. In others, existing facilities were curtailed by declining bank deposits or by the desire of banks to maintain their assets in the form of liquid loans and securities purchased outside of their communities.

To fill in these gaps in the credit structure and to provide a stable source of credit for legitimate agricultural-credit requirements, a new system of production-credit associations was established. Farmers now have available in every section of the country a federally sponsored agency that can meet the needs for production credit on the basis of adequate security. More than 600 production-credit associations, covering every agricultural county in the country, have been established. Up to August 31, 1934, these agencies had advanced approxi-

mately \$70,000,000 for production-credit purposes.

Nearly half the total was advanced to farmers in the cotton-growing States. Relatively large amounts were advanced to farmers in Maine, New York, Virginia, California, Montana, and Washington. These credit associations have been utilized extensively in areas where the cash outlays required in the production of crops are relatively high. A considerable volume of advances has been made in the cattle- and sheep-growing States, where local banking resources have usually not been sufficient. The volume of livestock loans made by these associations represents, in part, a shift of loans previously held by the regional agricultural credit corporations, which are now in the process of liquidation.

Strengthening of Local Banks

The functioning of these credit associations will provide not only a stable source of loanable funds for agricultural-production purposes but will also tend to strengthen the position of local banks in agricultural communities. This will be particularly true where outside funds are required seasonally. Where extensive advances have been made for agricultural-production purposes by local banks, years of low farm income frequently have made it difficult to obtain sufficient repayments of agricultural loans to keep the banks in a liquid condition. Bank resources have become tied up in temporarily slow assets. As a consequence of such adverse conditions, local banks frequently have not been able to meet legitimate demands for production credit.

Where it has been the practice for local banks to borrow extensively from banks in the larger cities and from the Federal Reserve banks to aid in the seasonal financing of agriculture, years of low farm income have made it difficult fully to repay such interbank advances. As a large proportion of the banks' assets were usually pledged as security for such advances, subsequent bank failure frequently left assets of With the utilization only nominal value to secure depositors' claims. of the new farm-credit associations, agricultural-credit needs can be met without putting a severe strain upon local credit resources. The fact that such a source of credit is available probably will make local lending agencies more willing to extend credit. If depositors exert an abnormal demand for deposits, loans made to farmers on a sound basis can be quickly realized upon by having the farmers refinance such loans through production-credit associations. These associations will therefore tend to give to sound agricultural paper a liquidity that has hitherto been lacking.

Credit for Cooperative Associations

Credit facilities for cooperative marketing associations have been greatly enlarged by setting up in each of the 12 Federal land bank districts a new institution known as a bank for cooperatives. In addition a central bank for cooperatives has been set up in Washington, D. C., to care for the credit requirements of the larger associations and for those associations operating more or less upon a national basis. From June 1, 1933, to March 1, 1935, the 12 district banks for cooperatives loaned \$24,608,000, and the central bank for cooperatives advanced a total sum of \$49,236,000. In part, these banks continue to extend the type of credit that was previously advanced out of the revolving fund of the Federal Farm Board. Lending facilities under the new set-up, however, are greatly enlarged. They now become available to all local cooperative organizations that can meet the requirements. Loans can be obtained either for working capital or to finance capital requirements.

Farm conditions in the last few years have led to the need of a special type of emergency financing, which the Federal Government supplied through crop-production and feed loans. Such loans were provided in 10 different years since 1921. As a result of the establishment of the production-credit associations, which provide a source of credit to those who can supply adequate security, and of the increase of farm income in 1933, the demand for such emergency crop loans was substantially reduced in 1934. The total number of crop-production loans made by the Farm Credit Administration in 1934 amounted to 377,964 (as of July 31) involving a total of \$30,837,944 compared with 633,585 loans in 1933 involving a total of \$57,376.040.

Difficulties which farmers have faced in their credit arrangements have been further ameliorated by various measures taken to encourage the refinancing and readjustment of the debt burden of those farmers who have been faced with the possible loss of their farms. To assist such farmers in obtaining an equitable adjustment of their debt obligations, voluntary conciliation committees have been set up in more than 2,400 agricultural counties. These committees, appointed by State authorities, have mediated between farmers and their creditors. Their objective has been to arrange for the voluntary settlement of debt difficulties, through an extension of the time of payment, a readjustment in the rate or method of payment, or a reduction in the total amount to be paid. Individual farmer's cases, involving over \$200,000,000 of debts, have been handled by these committees. Such efforts have enabled a substantial number of debt-distressed farmers to retain farm ownership.

Amendment to Bankruptcy Act

The Bankruptcy Act was amended in 1933 to provide for the appointment of Federal conciliation commissioners to assist in bringing about an adjustment or a composition of the indebtedness of farmers who cannot meet their maturing obligations. These provisions have not been extensively utilized, but their existence has been a factor in bringing about voluntary agreements between creditors and debtors. The scope of the provisions was further enlarged in 1934 by an additional amendment providing for the compulsory appointment of a debt conciliation commissioner in each county.

Another amendment to the Bankruptcy Act in 1934 created a greater opportunity for farmers to retain farm ownership, in cases where a debt composition or adjustment has not been obtained through a voluntary conciliation committee or the mediation of a Federal conciliation commissioner. In the past the proportion of financially distressed farmers who have resorted to bankruptcy proceedings has been relatively small. The latest amendment to the Federal Bankruptcy Act may bring about some increase in farmer-bankruptcy cases. Because of other means of debt refinancing and adjustment, however, it is not expected that this increase will be significantly large. The existence of these bankruptcy privileges rather will tend to bring about an equitable readjustment of the farmer's debt obligations upon a voluntary basis, with or without the mediation of local conciliation committees or Federal conciliation commissioners.

NORMAN J. WALL. Bureau of Agricultural Economics.

The drought of 1934 did not really ROP Adjustment Needed end the farmer's surplus problems. to Prevent Return to It could easily start them again. We ■ General Overproduction still have a cotton carry-over of 8

million bales when we need only 5 million. We still have stocks of certain types of tobacco three times the normal. The wheat carry-over may be down close to normal by the end of the 1934-35 season, and the number of cattle may be brought close to normal; but the real surplus is not in these figures so quickly brought down by unprecedented

The real surplus is in the acres that are available and which are

certain to be put under the plow if no control program exists.

As has happened many times before, the relatively high prices due to drought and the satisfactory returns derived from the A. A. A. programs could lead us into such an expansion in wheat, corn, cotton, and later livestock as to put us in 1936-37 where we were in 1932 if 1935-36 weather were favorable.

More than ever we need a program of balance and restraint. need to balance the production in the several branches of agriculture through a definite coordinated program. We need also to maintain a

proper balance between agriculture and industry.

Capital not being used elsewhere is pressing to be put to use in wheat, corn, cotton, in which uses it would unbalance crops and livestock. Industrial money and unemployed men pressing upon the land easily create a general expansion in farming. Such expansion would call for the reenactment of the A. A. A. were it to pass out of the picture.

No Foreign Outlet for Wheat Surplus

In wheat we are not out of the shadow of surplus. weather for the 1935 crop would give a surplus of 150 million bushels, above the expected carry-over of about 155 million at the end of the 1934-35 crop season. No foreign outlet for this surplus is in sight.

Every year since 1920 we have planted between 60 and 70 million acres in wheat and in every one of these years, except the last two, average yields per acre planted have ranged between 11 to 15 bushels.

We can easily have a crop of 750 to 950 million bushels in 1935 or 1936 out of these possibilities; for without the A. A. A. at least 65 million acres would be planted for wheat to be harvested against 60 million in 1934. The prices that growers received during the past year and the recent trend in prices are more than ample to bring about a cycle of wheat expansion.

Generally it is not recognized that we have had cycles in wheat acreage nearly as pronounced as in cattle numbers. The latter run in cycles of about 14 to 16 years. In wheat we had an acreage peak around 1880, another in 1900, and a third in 1920. Without the A. A. A. we should start on the road to still another peak in wheat

production by 1940.

Factors making for a future surplus if the A. A. A. does not exercise guidance are (1) the returns given by the A. A. A.; (2) moneyed people eager to finance wheat production without seeing the end of the road; and (3) the millions of unemployed who will be enticed onto the land.

All of last year's corn acreage plus 10 to 15 million more acres would be planted in 1935 if the Corn Belt went back to individual action without regard to the consequences.

Difficulty of Using Large Corn Crop

Bearing in mind that the 1934 feed supply and prices, and the A. A. A. program, have greatly reduced the number of hogs and cattle, what would producers do with a good-sized corn crop in 1935? Without the A. A. A. to help them, they would not be able to store the surplus as they were able to do in the past season.

Hence, we would revive the livestock cycle. Low feed prices in 1935–36 would stimulate the production of hogs, cattle, dairy products, as low feed prices have always done. The tugging and pulling between the grain and livestock producers would begin again.

It takes a price of only a little over 10 cents per pound for cotton to start acreage expansion. Under ordinary conditions the 15 to 16 cents which the cotton growers are getting from sales and benefit payments would put 4 to 5 million acres back into cotton. But now that they have reduced acreage for two seasons, twice that amount might be added to 28 million acres planted in 1934, making nearly 40 million acres and a potential addition to the 10-million-bale carry-over to its 1932 magnitude.

Thus farmers must beware of the pressure of the unemployed onto the land and of the flow of unused industrial capital into wheat and corn expansion. These movements tend to cause a new production cycle. Farmers must also have protection against the short-sighted in their own ranks, who judge the future by the unstable present. As much as ever they need insurance against weather conditions through a system of stabilized production supported by the storage of surpluses under loan and seal. The country would thus be assured of a constantly adequate supply of food and clothing materials, and the resulting stability in farm prices and income would contribute to general economic stability. The agricultural adjustment program, soundly carried out, can give that stability, protection, and insurance.

Louis H. Bean, Agricultural Adjustment Administration.

AIRY-HERD Improvement In dairy herd improvement asso-Facilitated by Testing Cows Year After Year

ciation work the expression. "continuous testing", means the keeping of yearly production, feed,

feed-cost, and income records of each cow in the herd, year after year. The cost of keeping such records is generally about \$3 a year per cow. the cost varying somewhat according to the size of the herd and the pay of the tester. A large percentage of the association members find

that it pays well to keep their herds continuously on test.

Dairy herd improvement, through herd-improvement associations, is brought about almost altogether through selection, feeding, and breeding. Records are kept to cover all three purposes. Discontinuance of the work for a single year interferes greatly with selection and feeding and practically blocks the breeding work insofar as the proving of bulls by means of lactation records is concerned. Dairy cows vary greatly in production from year to year due to age, condition, length of lactation, season of freshening, and other causes. For that reason it is not advisable to feed a cow in any one year according to a previous vear's production record.

Records of Both Milk and Butterfat Needed

On an average, about 20 percent of the cows on test are replaced each year. That means that in a herd of 20 cows there will be about 4 new cows each year on which there are no production records, either of milk or butterfat. Of course, it is possible for the owner to weigh the milk himself and to feed concentrates according to milk production regardless of the butterfat test, but if the milk of these new cows varies in butterfat content from 3 to 5 percent, the feeding of concentrates according to milk weights only is, at best, a very crude procedure.

Suppose the yearly milk production of the new cows in the herd varies all the way from 5,000 to 7,000 pounds. It is easily possible that the cow producing 5,000 pounds of milk may be producing as much or even more butterfat than the cow whose yearly milk production is 7,000 pounds. In such circumstances milk weights alone are unsatisfactory as a guide in feeding or as a basis for selecting the cows

to keep and the ones to be discarded.

There are on file in the Bureau of Dairy Industry many stories of new dairy herd-improvement association members who report that the cow they thought was the best turned out to be the poorest producer in the herd. A number of farmers, before they joined a dairy herd-improvement association, were induced to estimate the yearly milk and butterfat production of each cow in their herds. The error of estimate for individual cow records varied all the way from 1 percent to as high as 60 percent, the average error being 25 percent in milk production and 28 percent in butterfat production. Such estimates are not exact enough either for feeding purposes or for the purpose of selection.

Continuous Testing Has Numerous Advantages

For the purpose of feeding and selection, testing every other year or every third year is better than not testing at all, but it removes only a part of the guesswork.

Most important of all reasons for continuous testing is the fact that production records of dams and their daughters are compared to prove the breeding value of the sire of the daughters. When dam-and-daughter comparisons are made on the basis of production during the 12 months of the association testing year, the work of proving bulls is much delayed if the testing is not continued year after year and in many cases the bulls cannot be proved at all. And when it comes to proving bulls by comparing the lactation-period records of the dams and daughters, the work will be completely blocked if testing is not continuous. Most of the lactation periods cover parts of 2 years; and if testing is discontinued during one of these years, few if any dairy sires can be proved by lactation-period records, or by means of any kind of records. Since the proving of dairy bulls has, in recent years, become such an important part of the dairy herd-improvement association work, the value of continuous testing cannot be emphasized too strongly.

But some dairyman may say: "I am not interested in proving sires. I think I am doing pretty well when I keep a registered bull to head my herd." Let us consider the records of two registered bulls. One registered bull whose records are on file in the Bureau was mated to 11 cows whose average yearly butterfat production was 466 pounds. The average butterfat production of the 11 daughters, all sired by this registered dairy bull, was 279 pounds. Here was a drop in one generation from 466 pounds of butterfat to 279 pounds. Certainly it paid the owner to discover what the bull was doing in the way of decreasing production before he had done any more damage. Another registered bull of the same breed, but in another herd raised butterfat production from 323 pounds to 508 pounds. This information was also of great value in measuring the improvement due to the use of this registered bull.

Dozens of similar comparisons could be made from the records on file. The sooner such bulls are proved the better. In one case the records showed that the registered bull had already ruined the production of one generation of the herd. The dam-and-daughter records have sealed his doom. In the other case the records have proved the breeding value of an excellent registered bull. Surely no dairyman

can afford to take chances when he has so much at stake.

Wise Use of Records Improves Herds

Not every herd on test shows improvement every year, yet the history of the dairy herd-improvement association work since its beginning has been highly satisfactory. The work began in Newaygo County, Mich., in 1906. The average butterfat production of the cows on test that year was 215 pounds. Every year since then for which summaries have been made has shown an increased production per cow. For the year 1933 the average butterfat production of the cows on test was 313 pounds or 98 pounds more per cow than for the first association the first year. This production per cow is about 90 percent more than the average production of the milk cows of this country. Dairy herd-improvement association work does not result in overproduction of milk and butterfat if testing is accompanied by a close culling out of low and unprofitable producers. Table 3 shows the results that come from an intelligent use of dairy herd-improvement association records.

Total Income Total 3.5311income Gross Cost of income feed per Total milk over Milk Drice OTET Year Corre cost of pro-duced per cost of per cow hill per cow cow feed per feed for by herd COW herd Number Pounds Cents Dollars Dollars 4 8 1 Dollars Dollars Dollars Pounds 4, 680 6, 750 7, 359 0. 20 2, 208 1, 815 1, 419 107, 640 101, 250 80, 949 23 109 157 299 540 121

Table 3.—One herd on test for 3 successive years

Here we have a record of a herd that was on test for 3 successive years. Culling out the low producers had reduced the herd from 23 to 11 cows by the third year. It cost more per cow to feed the 11 cows than the 23 but the total feed bill was \$789 less. By milking fewer but better cows in the third year the owner not only placed 26,691 pounds less milk on the market, but increased the total income over cost of feed from the herd by \$165. It not only paid the owner of this herd to test continuously but it paid him big returns to study the individual records of his cows.

On January 1, 1934, there were 793 dairy herd-improvement associations in active operation. Doubtless these would nearly all die out in a short time if the testing of the herds were not continuous. As a rule, the owners of the poorest herds are the most likely to drop out of the association. Yet they are the ones that need it most. The wisest members continue year after year, because they have found that continuous testing pays.

J. C. McDowell, Bureau of Dairy Industry.

EPLETED Ground Water
May be Replenished
by Artificial Spreading

It is a noteworthy fact that during the serious droughts and resultant crop losses of recent years the areas that depended wholly or in part on

irrigation suffered relatively little in comparison with the droughtstricken regions generally. Indeed, only in extremely limited irrigation sections has any distress resulting from crop failures been felt by the farmers. Most irrigated crops have matured before there was any material shortage of water. This condition was especially marked in districts getting their irrigation supplies from underground sources. Practically all of such areas have come through the drought periods with little or no loss resulting from crop failures.

Naturally, however, the current series of years of low precipitation has been accompanied by an overdraft of surface-reservoir storage supplies and by a corresponding depletion of underground supplies. Furthermore, during the same period there has been a notable increase in the extent of irrigated agricultural areas served by underground water. Consequently, these two factors—decreased natural recharging and increased draft of the supply—occurring simultaneously, have tended to create a serious menace against future assurance of dependability on underground storage.

A survey of areas where water is pumped from underground supplies as the principal source for irrigation use shows a generally constant lowering of the surface of the water table. The situation is naturally more serious in some localities than in others since some underground storage reservoirs are larger, and consequently are depleted more slowly than others; and, on the other hand, some have less favorable recharging possibilities and consequently respond more slowly to recharging either natural or artificial.

It seems certain that in any area dependent upon pumped water for either domestic, irrigation, or industrial use the recharging of the underground supply can be stimulated by artificial methods. This has been found to be true in areas that have been studied in Arizona,

California, Oregon, Texas, Utah, and Washington.

There are several different methods that may be employed in effecting replenishment of ground-water supplies. In this connection it should be noted that one of the most important sources of loss of surface-water supplies lies in the seepage that takes place, sometimes very rapidly, during the conveyance and storage stages, and in deep percolation of much of the irrigation water applied to cropped lands. This loss, however, while decreasing the gravity supply, constitutes a material factor in the recharging of the ground-water supply. Similar replenishment may be effected artificially by fall and winter irrigation, involving the use of the canals practically throughout the entire year, by diverting small streams from their natural channels and "spreading" the water over absorptive areas, or by utilizing shafts and wells sunk to suitable gravel deposits. Local conditions and legal requirements must, of course, be complied with, and precautions against the washing or leaching away of soil fertility should always be taken, whatever the method employed.

Southern California furnishes the best examples of well-developed spreading systems. In that locality the recent years of subnormal precipitation have naturally been associated with an accumulated drop in the major ground-water levels, which had already become seriously lowered. Consequently, the State, the counties and other political subdivisions, and even conservation associations have been aided by the Federal Government in extending several hundredfold the works and facilities for conserving and spreading the flood waters

discharged by streams of intermittent flow.

On the Santa Ana and Lytle Creek cones, several hundred miles of spreading canals, large and small, have been built in highly porous materials. On Cucamonga, Devils, and San Antonio Creeks retention dams and basins have been provided and extensive systems of canals

have been constructed over absorptive areas.

During this period of development the United States Department of Agriculture, through its Bureau of Agricultural Engineering, has been cooperating with the local more directly interested agencies in developing research data concerning rates of percolation in different types of soil surface, the relative advantages and disadvantages of various spreading systems, the differences in percolation factors of areas denuded of vegetation and those of areas still bearing their native growths, the effects of fluctuating water tables, and other important factors.

Water spreading is no longer an experiment; under suitable geologic, topographic, and water-supply conditions it often is the most profitable investment in water conservation that a community can make.

A. T. MITCHELSON, Bureau of Agricultural Engineering.

OWNY Mildew of Hops Causing Serious Damage; Control Studies Under Way Hops have been grown in many States, but the crop has for years been localized in sections of Oregon, California, and Washing-

ton (fig. 15). In 1890 approximately one-half of the 40,000,000 pounds

produced in the United States came from New York. Thereafter the production in that State declined steadily, and since 1920 it has been commercially unimportant. About 32,000 acres of hops were grown in the Pacific Coast States in 1934, the production amounting approximately 35,000,-000 pounds with an estimated value about \$10.000.000.

Growers have many problems in connection with the growing and marketing of this crop. At present the most important crop. of these concern (1) the quality of hops produced and their comparison with those of foreign production, and (2) the control of the very serious disease



FIGURE 15.—Typical view of a hop field in Oregon at harvest time.

known as downy mildew, which often causes heavy losses.

Studies on Quality of Hops

Hops impart to beer a characteristic flavor and bitterness, depending largely on the quantity of certain constituents present in the hops, of which the resins are of special importance. The soft resins impart the desired flavor to beer, the hard resins having practically no brewing value. It is important, therefore, that all commercial practices be conducted, so far as possible, with a view toward maintaining the quantity and quality of the soft resins. Any progress made in this direction by the growers and those who subsequently handle and store the hops should permit the industry to meet more effectively the competition of foreign hops.

To encourage concerted efforts and to provide the necessary background of information the Bureau of Plant Industry, through its Division of Drug and Related Plants and in cooperation with growers and dealers, has undertaken an investigation of the various practices involved, to determine the relationship of prevailing methods to the quality of hops and to recommend practicable modifications likely to result in a more uniform and better quality. Attention is given to the influence of fertilizers, stage of picking, methods of drying and baling, and conditions of storage, as determined by chemical analysis of the hops produced under various controlled conditions.

Studies on the Downy Mildew

Downy mildew is a fungus disease that has been prevalent in European hop fields since 1920. In this country it was observed on wild hops in Wisconsin as early as 1909. In 1928 it appeared on cultivated



FIGURE 16.—Effect of downy mildew on new growth of the hop plant. At the right, normal young vines; at the left, typical "spikes" caused by the disease.

hops in New York and in British Columbia, where a severe outbreak occurred. It was not recognized in Washington until the following year, but in 1930 it appeared in many of the fields in both Washington and Oregon and since then has been the most serious problem of the growers in both States. In the spring of 1934 the first outbreak occurred in California, where it appeared in the coast counties. The spread of the disease and its virulence depend on climatic conditions; cool, humid weather favoring its development. In the Sacramento Valley in California and in the Yakima district in Washington, where hot, dry weather generally prevails during the growing season, the disease may not become established or do serious damage, but in the other hop-growing districts vigorous control measures must be adopted to avoid excessive losses.

The disease attacks all the aboveground parts of the hop plant. It is characterized by two types of spores: (1) Conidia or summer spores,

which are capable of spreading the disease at an alarming rate during the growing season if conditions are favorable for the disease, and (2) cospores or winter spores, which are thought to be the chief means of carrying the disease over from year to year. Most of the damage is caused by the effects of the disease on the young vines that develop from the crowns in the spring. These are stunted, causing the so-called "spikes", which prevent the vines from producing a crop (fig. 16). Under favorable conditions the disease also attacks the hop cones in the late summer and causes a direct loss by lowering the quality of the product. Entire fields are in some cases destroyed, while in others the damage is frequently sufficient to deprive the grower of all profit from his crop.

Problem Approached in Two Ways

In 1930 the Bureau of Plant Industry in cooperation with the Oregon Agricultural College undertook an investigation of the disease to assist growers in combating its effects. The problem was approached in two ways: (1) To provide practical control measures in the hop fields, and (2) to develop new varieties resistant to the disease. The first includes studies of the behavior of the disease, its propagation, and the conditions that determine its spread and virulence, also the formulation of methods of control by means of sprays and dusts and of practical cultural methods that minimize its spread. Information of this kind is constantly being brought to the attention of growers in order to provide immediate assistance. The second line of investigation cannot give immediate practical results but seeks rather to provide new commercially useful varieties partly or fully resistant to the disease to replace in the future those now grown and which are especially subject to attack.

A. F. Sievers and Frank Rabak, Bureau of Plant Industry.

RIED Skim Milk Added to Other Foods Improves Their Nutritive Value The manufacture of dried skim milk is one of the more recent developments of the dairy industry. The past 15 years have been

try. The past 15 years have been marked by a steady increase in the utilization of and demand for this product, and today it is manufactured to some extent in practically every State. Production has increased steadily from 41,893,000 pounds in 1920 to 288,114,000 pounds in 1933.

Process of Manufacture

To produce a dried skim milk of excellent quality only the best quality of skim milk can be used. Nothing is added to the skim milk prior to its desiccation, hence the product contains only the solids not fat, plus some milk fat and moisture, and the yield is about 8½ to 9 pounds of dried product per 100 pounds of skim milk.

One of the following processes is usually used in its manufacture. Atmospheric roller process: Steam-heated drums are so arranged that partially condensed skim milk is spread in a thin layer on their outer surface. During the revolution of the drum the adhering film

of milk dries and is then scraped off. This dry film is reduced to a

powder by revolving brushes or other grinding devices.

Vacuum drum process: This is really the roller process with the roller or drum enclosed in a chamber which is maintained at a partial vacuum during the drying operation, thus making it possible to dry skim milks at temperatures below their respective normal boiling points.

Spray process: The fluid skim milk, sometimes partially condensed, is sprayed into a current of heated air which removes the water and leaves the milk solids as a finely divided powder. Various devices

are used to separate the powder from the moist air.

Flake process: Partially condensed whipped skim milk is spread on a wire belt which passes through a heated chamber wherein currents of hot air are directed against it. The dried product is removed from the belt in the form of flakes.

Nutritive Value of Dried Skim Milk

The approximate percentage composition of dried skim milk is as follows: Proteins 38, lactose 50, salts 8, fat 1, and moisture 3 percent, and it represents an energy value of over 1,800 calories per pound, which is greater than that of most foodstuffs, calculated on a similar basis.

An analysis of average whole milk indicates that the ratio of proteins to fat is approximately 1:1.08, while the ratio of sugar to fat is approximately 5:3.8. The relative biological caloric value of the constituents as foods would be as shown in table 7.

Table 7.—Relative total caloric value of constituents in fluid whole milk

	Parts per 100 parts milk	Heat of combustion calories per gram	Relative total ca- loric value	Approxi- mate per- centage of total
Fat. Protein. Surar (lactose). Salts.	3.8 3.5 5.0 .7	9 4 4	34. 2 14. 0 20. 0	50+ 50-

These figures indicate that approximately one-half of the energy value of milk is contained in the solids not fat, or the skim milk.

Energy values alone, however, do not indicate the total value of the skim-milk solids. Foods are needed not only because they furnish energy but also because they furnish material with which tissues are repaired and new tissues are formed. The salts of milk which are found largely in the skim milk are especially valuable food constituents in this respect. Their readily assimilable calcium and phosphorous compounds furnish mineral constituents essential to development and proper growth. The proteins are readily digestible and assimilable and are more nutritive than those of most foodstuffs. The lactose, in addition to having a high caloric value, is especially beneficial in regulating the intestinal flora and seems also to be superior to other carbohydrates in some respects for the growth of young animals. Skim milk is an especially valuable human food also because of its vitamin G (B₂) content, and should, therefore, be a constituent

of the diet of all people in regions where pellagra is of frequent occurrence. It may also contain traces of vitamin D and even vitamin C.

From a consideration of the research work to date on the vitamin content of dried skim milk, it may be said that the approved processes of drying now used do not expose the product to high enough temperatures for a sufficient period of time to materially affect any of the vitamins except the antiscorbutic vitamin C. This vitamin is abundant in most vegetables and citrus fruits, which should be a part of every diet whether the milk used be a liquid or dried product. In the feeding of infants and children a milk diet should also be supplemented with sources of vitamin D, such as cod-liver oil and egg yolk, and the individuals should be subjected to direct sunlight frequently.

Uses of Dried Skim Milk

The almost completely digestible and assimilable milk proteins and the readily metabolizable calcium and phosphorous compounds in dried skim milk, make it especially valuable as a constituent of the diets of

children and adults, and of the feed of growing animals.

The most convenient method of supplementing the diet with milk solids not fat is that of adding dried skim milk to foods in daily use. A few of them are breads and cakes, biscuits and crackers, ice cream, candy, chocolate drinks, sausages, meat loaf, custards, puddings, sauces, gravies, etc. Often the dried skim milk improves the texture, appearance, and flavor of the product in addition to enhance

ing the nutritive value.

For the same reasons that skim milk is one of the most valuable of human foods, it is also one of the best foods for other animals and for fowls. This fact has been appreciated by the most successful raisers of calves, chickens, dogs, goats, foxes, etc. Work at the Minnesota Agricultural Experiment Station has shown that with the gradual decrease of the quantity of whole milk fed to a calf during the first 14 days, skim milk should be added to the feed in increasing amounts up to the sixtieth day. The value of this method of feeding has been confirmed by work at other stations, and dried skim milk has been found to be a convenient form of skim milk to use as a grain supplement in these cases.

Incorporation of liberal quantities of dried skim milk into the diet of growing chicks has been reported to be effective in protecting them against coccidiosis. Workers at the California Agricultural Experiment Station recommend the use of dried skim milk in their feeds to the extent of 40 percent of the weight of the dry materials. Other workers at the Wisconsin and New York (Cornell) stations also recommend the liberal use of dried skim milk in the feeds of chickens.

Most of the dried skim milk produced at present is used in the manufacture of bread and ice cream. Considerable quantities of the lower grades of the product and some of the better grades are used in poultry and animal feeds. Dried skim milk insures a ready source of skim milk solids of uniformly good quality, is economical in handling and storing, and is convenient to use. These advantages have been recognized by the industries mentioned and are also being recognized by farmers in may localities, who maintain a supply of the product for use in the feeds of their farm animals. Smaller units of trade, i. e.,

hotels, clubs, etc., also are aware of the many advantages of the product. This is especially true in the areas of low milk production.

Handling and Storing

With the increased manufacture and greater use of this product has come the need for more convenient methods of handling it, especially

in smaller lots.

Dried skim milk should be maintained at a low moisture content throughout the period of its use in order to prevent spoilage. Because of its avidity for moisture, moistureproof containers are the only assurance against these changes. For the trades wherein large quantities are used the product is usually packed in specially constructed barrels. With greater general use of the product by the smaller manufacturers, and in the household where consumption is limited, a need has arisen for moistureproof cartons or packages which will facilitate the distribution of small quantities to the retail trade.

The laboratories of the Bureau of Dairy Industry have found that bags of bond paper containing a laminated glassine inner liner, or well-constructed and waxed paper cartons, will exclude moisture over long periods even in a relatively humid atmosphere and can, therefore, be used in the retailing of this product in small lots. Further research work along this line will undoubtedly result in the disclosure or development of other types of containers that can be used for this purpose and should aid materially in the greater distribution and use

of dried skim milk.

George E. Holm, Bureau of Dairy Industry.

DUTCH Elm Disease
Must be Eradicated
to Save American Elm

Wide-spread destruction faces the American elm through the spread of the Dutch elm disease, caused by a deadly fungous parasite introduced

deadly fungous parasite introduced from Europe. The presence of this disease in the vicinity of New York Harbor was discovered in June 1933, but subsequent observations indicate that it may have become established there as early as 1929. It is now known to have invaded an area of approximately 2,500 square miles in New Jersey, New York, and Connecticut, within a 40- to 50-mile radius of New York City. By October 1934 more than 7,500 diseased trees had been located in this center of infection. Presumably many more are diseased but had not at that time developed characteristic external symptoms.

In practically all the States east of the Rocky Mountains the American and other species of elm constitute an irreplaceable public asset. In the Northeastern States particularly the American elm is the characteristic shade tree along streets and about dwelling houses. As such, this species has an economic value that runs into many millions of dollars. The enhanced value of real estate due to the presence of elm shade trees in many parts of the United States may hinge on the success of the campaign against this disease in the restricted area

at present infected.1

I After this article was written the Public Works Administration on the recommendation of the Department allotted \$677,000 for combating the Dutch elm disease. Owing to a provision made by Congress, that the regular appropriation will be reduced by an amount equal to any amount that may be allotted for this purpose from Federal emergency appropriations, the amount actually available for combating the Dutch elm disease, including the location and removal of potentially diseased and dying elm trees, is \$527,000. Work under this allotment was started early in 1935.

Observations of the effect of the Dutch elm disease in Europe, as well as in the infected area around New York City, indicate that this disease is capable of wiping out all our native species of elms. There is no known cure for the Dutch elm disease. The only present hope of preserving our elm plantings rests on the eradication of the disease from this country, which present information on the means of its spread indicates may be possible. The accomplishment of this task necessitates immediate action to check the spread of the disease while it is confined to a comparatively small area, and the cost of destroying infected trees is not prohibitive. Another year's delay will dissipate the only chance of saving the elms, or at least will multiply the cost of an adequate eradication program in the future.

Caused by Parasitic Fungus

The Dutch elm disease is caused by the parasitic fungus Ceratosto-mella ulmi (Schwarz) Buisman, which lives and develops in the sapwood of elms. The presence of this parasite in a tree results in the growth of obstructions in water-conducting vessels, first of the branch originally attacked and eventually of the entire tree.

The first external symptom of the disease is the wilting or dying of the foliage of the infected twig or branch, and this may occur as early as 10 days after the part is attacked. Apparently, however, these symptoms may not be in evidence for some time. Field observations in 1934 indicate that the disease does not usually enter a large proportion of the water-conducting vessels of the tree until the spring following infection. Early in the spring the American elm develops a new ring of such vessels. The fungus may cross into this new zone of vessels and may spread with great rapidity to all its parts in the roots as well as in the aerial portions of the tree. The foliage wilts and dies, and finally either the entire tree dies or there may be a temporary recovery as scattered new vessels laid down in the summer wood permit partial circulation of water.

Soon after an elm branch or tree begins to die, it may be invaded for breeding purposes by bark beetles and other wood-boring insects. One of these bark beetles, Scolytus multistriatus Marsh., is of European origin, but was reported in the United States as early as 1909. This beetle has been found at various points from northeastern Massachusetts to southeastern Pennsylvania, and it is well established in most of the infected areas in New York, New Jersey, and Connecticut. This bark beetle has been demonstrated to be an important agent in the spread of the Dutch elm disease in this country. When adults emerge from the bark of a diseased elm, they may carry viable fragments or spores of the fungus in or on their bodies. These adults fly to young twigs of elm, and in feeding on the succulent tissues, especially in the crotches of such twigs, they may inoculate healthy elms with the fungus. As these trees wilt and begin to die, they in turn are entered by bark beetles seeking to establish new broods. Thus the cycle continues, with rapid multiplication of both the beetle population and the number of diseased trees.

Symptoms Favor Eradication of the Disease

Fortunately, the relation of fungus development to beetle infestation is such as to favor eradication of the disease. Bark beetles do not start to breed in a diseased elm until the affected part is so weakened as to show external symptoms. Then 50 to 60 days elapse before the new adults mature, emerge, and spread the disease to other elms. Therefore, by systematically inspecting all elm trees within and near the infected area once a month during the foliage season, when the beetle is active and disease symptoms are readily apparent, and thoroughly destroying all diseased trees as soon as they are found, it appears practicable to prevent the escape of this disease carrier from every infected tree. Once the spread of the disease has been halted, continuation, for a number of years, of systematic inspection of the infected area and prompt destruction of trees in which belated symptoms appear should result in complete elimination of the disease.

Eighteen elms attacked by the Dutch elm disease have been found outside of the main area of infection in the vicinity of New York City. A single diseased tree was discovered in Cincinnati, Ohio, in 1930. In the same year 3 infected trees were found in Cleveland, Ohio, and additional infected trees have since been discovered, 4 in 1931, 1 in 1933, and 2 in 1934. One infected tree was found in Baltimore, Md., in 1933. New isolated infections in 1934 comprise 1 tree in Old Lyme, Conn., 1 tree at Norfolk, Va., and 4 trees in Indianapolis, Ind.

All these isolated infected trees, except the one near Old Lyme, Conn., are definitely associated with known shipments of burl elm logs from Europe. Such logs are recognized as the means of entry of the Dutch elm disease into the United States. Present information indicates that the infected tree near Old Lyme resulted from the movement of domestic diseased material. There is no indication that any of these spot infections have become centers of spread, evidently because of the absence of the European elm bark beetle from these localities and because the diseased trees were immediately destroyed.

localities and because the diseased trees were immediately destroyed. Following the finding of a diseased elm in Maplewood, N. J., in June 1933, extensive scouting was carried on in New Jersey, New York, Connecticut, and neighboring States in an attempt to define the limits of the infected area. During the winter and early in the spring of 1934 scouting for diseased trees and their destruction were continued by various recovery agencies. In May and June the rapid development of serious symptoms in elms infected in 1933 or in previous years necessitated a sharp upward revision of the estimated number of trees affected. The total number of diseased trees that had been found by October 24, 1934, in this infection center had reached 7,557, of which 5,032 were in New Jersey, 2,470 in New York, and 55 in Connecticut. All but approximately 1,450 of these trees had been removed by this date.2 One systematic examination of the entire area known to be infected, plus a survey of a safety border arbitrarily established 10 miles beyond the outlying infections found, was completed. A large part of this area was examined a second time, and a relatively small portion was examined three times at intervals of approximately 1 month.

Because at least one winter is required for the majority of infected trees to develop marked external symptoms, at no time does current information based on these symptoms necessarily represent the current status of the disease. Figure 17 represents the principal infected area and the number of diseased elms as known on October 24, 1934,

² Diseased trees found in this infection center up to Apr. 6, 1935, totaled 7,773, of which 5,134 were in New Jersey, 2,583 in New York, and 56 in Connecticut. Only 6 known diseased trees remained standing.

after the completion of the first systematic examination of the known infected area and its environs.

Dead and Dying Trees May Harbor Infection

In addition to the known diseased trees still standing, there is in the work area a large accumulation of dead and dying elms, many of which may be harboring the disease. Elimination of these deca-

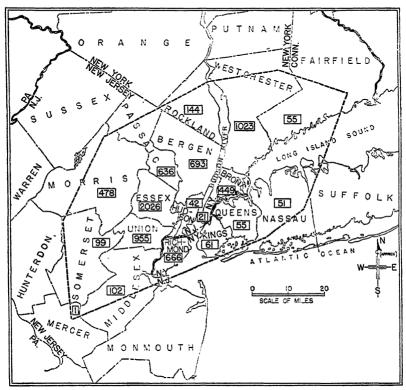


FIGURE 17.—The extent of the principal area known to be invaded by the Dutch elm disease, and the total number of diseased elms confirmed in each county, as of October 24, 1934.

dent and dead elms is essential to the success of the disease-eradication program. The completion of this clean-up work before the spring of 1935 will permit concentration of location and eradication activities in 1935 on the new crop of dying elms.

The increased knowledge of the Dutch elm disease situation gained during 1934 has furnished a sounder basis for optimism with respect to the ultimate eradication of the disease. However, it is recognized that only a thorough, long-term program of adequate proportions can preserve for the future the stately beauty of this unsurpassed shade tree, the American elm.

L. H. WORTHLEY, Bureau of Entomology and Plant Quarantine.

GG Hatchability Is Increased by Frequent Turning in Incubator

The hatchability of fertile eggs may be increased by frequent regular turning during the first 2 weeks of incubation, recent investigations indicate. Eggs in

large incubators are usually turned mechanically, a half turn in one direction at one turning, then a half turn in the other direction at the next. Eggs in small incubators are usually turned by hand, the



FIGURE 18.—Twisted albumen of an egg that was turned always in the same direction during incubation.

direction of successive turnings depending on the operator. The usual number of turnings a day is from 1 to 3. Recent data obtained at the United States Animal Husbandry Experiment Station at Beltsville, Md., indicate that eggs turned mechanically at 15-minute intervals, about a half turn in one direction at one turning and an equal distance in the opposite direction at the next turning, hatched 7 percent better than eggs turned 3 times a day by hand. Both lots of eggs were of the same general origin and were in the same incubator at the same time. Still another investigation indicated that eggs turned

at least 8 times a day, at 3-hour intervals night and day, will hatch

better than eggs turned less frequently.

The manner and frequency of turning the eggs in the experiments at Beltsville were patterned after the procedure followed by the setting hen. She turns her eggs once every 15 minutes, on the average, in one direction at one turning, back at another, not over and over in the same direction.

Eggs turned always in the same direction, at 15-minute intervals from the beginning of incubation, usually fail to hatch. In many cases, the thick strands of egg white at each end of the yolk, the chalazae, become twisted so tightly (fig. 18) that the yolk is ruptured during the first week of incubation. Even when the embryos live to the second week of incubation, the membranes through which they breathe and also obtain lime from the shell seldom adhere properly to the shell membrane.

The Proper Position of Eggs in Incubators

Hatchability may be increased also by maintaining the proper position of the eggs in the incubator. The position of the egg partly determines the position of the chick in the egg at hatching time. Between the third and fifteenth days of incubation the operator should not allow the small end of the egg to be above the large end for a long period, because such a position is likely to result in the chick's head being in the small end of the egg at hatching time. Such a chick has only about half as much chance of hatching as a chick in the normal

hatching position with its head in the large end of the egg.

The turning and position of the eggs are most important during the first 2 weeks of incubation. The position of the chick within the egg is less affected by outside influences after the fifteenth day of incubation than before. Voluntary movements of the chick in response to gravity, mechanical shock, suffocation, or other cause probably result in some shift in position. Though it is certain that the effects of turning and egg position are relatively slight during the third week of incubation, the standard recommendation that eggs be kept in proper position and turned regularly to the eighteenth day of incubation should be followed until sufficient evidence is produced to indicate that even a slight improvement in hatchability may be obtained by some other method.

T. C. Byerly, Bureau of Animal Industry.

GG Yield of Chickens
Is Affected by Content
of Vitamin D in Diet
To obtain good egg production it is
not enough to give chickens all the
feed they will eat. Unless their diet
is carefully compounded, so that it

contains an adequate quantity of all the necessary nutrients and accessory food factors, they will not lay all the eggs they are capable

of producing.

A deficiency of vitamin D in the diet has a detrimental effect on the production of eggs and also decreases the strength and thickness of shells and the vitamin D content of yolks. If, in the case of pullets, the feed contains an inadequate supply of this accessory food factor, skeletal development is delayed. The net result is that the time required to reach full production is increased and an unnecessarily large number of small eggs is obtained. In the case of both pullets and hens, the ability of their eggs to hatch is materially decreased, if a diet containing an inadequate supply of vitamin D is fed.

Sources of Vitamin D

It is fortunate, therefore, that vitamin D is very easily supplied to laying chickens. Among the practical means of supplying this vitamin are sunshine, cod-liver oil, sardine oil, some of the other fish oils, and cod-liver meal. Ultraviolet irradiation of the chickens, or the use of irradiated yeast and solutions of irradiated ergosterol may be resorted to, but at present these methods of supplying vitamin D are either unsatisfactory or not economical. It is probable, however, that, in the near future, satisfactory irradiated products will be produced cheaply enough to make their use economical.

The cheapest source of this highly important vitamin is sunshine; but in many parts of the country during late fall, winter, and early spring, it is not possible for the chickens to get enough sunlight to supply all the vitamin D required. At such times it is necessary to have a more dependable source, such as cod-liver oil or sardine oil.

Inasmuch as not all cod-liver oils, sardine oils, and other fish oils containing vitamin D have the same potency, it is necessary that only products of guaranteed vitamin D content be used. A good cod-liver oil will contain 2,400 or more international vitamin D units per ounce, or 85 or more international vitamin D units per gram. Dependence should not be placed on cod-liver meal, unless its potency is definitely known.

Experiments on the vitamin D requirements of laying chickens in full production indicate that each bird should receive between 70 and 80 international vitamin D units per day. In other words, to meet this requirement, each ounce of feed consumed would have to supply at least 20 of these units.

Requirements Vary With Season

If the all-mash system of feeding is used, and the chickens are kept in strict confinement without access to sunlight, 1 pound of good codliver oil per 100 pounds of feed mixture will ordinarily supply enough vitamin D. If the mash-and-scratch system of feeding is employed, from 1.5 to 2 pounds of good cod-liver oil should be added to each 100 pounds of mash, depending on the proportions of mash and scratch which are fed.

Laying chickens are not usually kept in strict confinement without access to sunlight; and when they are not so kept, it is unnecessary to supply the full quantity of cod-liver oil indicated above. The quantity to use will depend on the amount of sunshine the birds receive. During November, December, January, February, and March, from 75 to 80 percent of the quantity of cod-liver oil recommended for strictly confined birds should be used; and during the other months of the year, between 25 and 50 percent as much. In any case, the amount of cloudy weather should be the determining factor.

If cod-liver oil that has been fortified, sardine oil, or other fish oils are used, the quantity to be added to each 100 pounds of feed will

depend on the guaranteed potency of the oil in question. A fortified cod-liver oil is one to which additional vitamin D has been added.

Caution Against Excess of Oil

A word of warning should be added about using too much cod-liver oil. Although 1 or even 2 percent of cod-liver oil ordinarily gives excellent results, it does not follow that 4, 6, or 8 percent will give still better results. Experiments conducted at the United States Animal Husbandry Experiment Station, Beltsville, Md., indicated that, in general, no advantage is to be gained by feeding a diet containing 3 percent of cod-liver oil, as compared with 2 percent. Also, it was found that when the diet contained as much as 4 percent of cod-liver oil, the hatchability of the resulting eggs was decreased, and that 6 to 8 percent of cod-liver oil materially decreased egg production, as well as hatchability.

HARRY W. TITUS, Bureau of Animal Industry.

ROSION in the Black Many surveys have been made by foresters and engineers to size up the extent and import of the erosion problem, and detailed studies have been initiated to determine the effect of the removal of the land's natural cover—forest, brush, grass—upon erosion and run-off. It has become

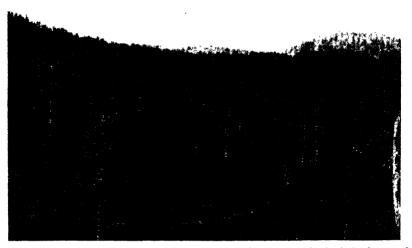


FIGURE 19.—A typical timbered slope in the Black Hills, with abundant reproduction in the foreground.

increasingly apparent in the United States that a detriment to forest cover, particularly on steep slopes, means a detriment to soil and water supply.

A notable example of severe erosion immediately following the destruction of the forest cover by fire, in contrast with the very satisfactory protection afforded by forest cover on an adjacent area, is found near Rochford in the Black Hills National Forest, S. Dak. The destruction of the protective cover was the only change that

occurred prior to the time the erosion took place—all other factors remaining unchanged. Here the direct relationship between the removal of forest cover and subsequent erosion is clearly demonstrated.

Conditions throughout the timbered portion of the Black Hills region, which includes between 1 and 2 million acres, are generally ideal with regard to ground cover and its effect upon the prevention of erosion (fig. 19). Forage is not abundant on the more densely timbered areas. The grasses are of unpalatable species and grazing is relatively light. Consequently, there is seldom heavy tramping by livestock with resultant compacting of the soil, favoring rapid runoff. The watersheds are generally well timbered and a thick mat of humus and litter covers the ground. This thick layer of vegetable matter is a very important factor in delaying run-off and in preventing erosion.

Burned-Over Areas Becoming Restocked

Reproduction of ponderosa pine comes in abundantly on sites suitable for tree growth, especially where the soil is coarse and light.

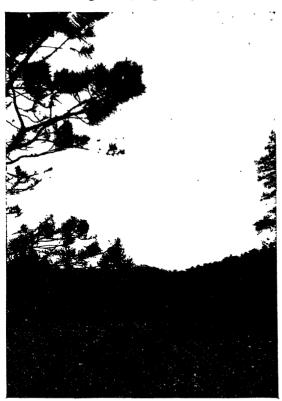


FIGURE 20.—Reproduction of ponderosa pine extending into a park.

Here is a dense stand of grasses and herbaceous plants, and no sign of gully erosion.

As a result young forests are becoming established on many bottom lands and slopes formerly covered only with grass or farmed. In fact, there are few burned-over areas in the Black Hills that have not become stocked with ponder-osa pine trees within a period of 10 years after fire (fig. 20).

On some areas within this section, however, there has been considerable active erosion during past years. But the old gullies have generally become well sodded, indicating that the former surface run-off and the accompanying active erosion have been effectively checked. Frequent examples of such "healing" of former erosion may be found.

In contrast to these conditions, the situation that exists on an

area in the northern portion of the Black Hills where the forest was destroyed by the disastrous fire near Rochford in the fall of 1931 is significant. Incendiaries set a number of fires which burned over an

area of 22,000 acres and were extinguished only after a 10-day battle by 3,800 fire fighters. On many slopes all of the trees, as well as the cover of grasses and weeds, were killed; duff and humus were completely burned.



FIGURE 21.—Conditions in a small gulch tributary to South Rapid Creek in the Black Hills in 1932, after the serious fire in the fall of 1931. The gully, 5 feet deep in places, was not in existence prior to the fire and is a direct result of a greatly increased surface run-off.

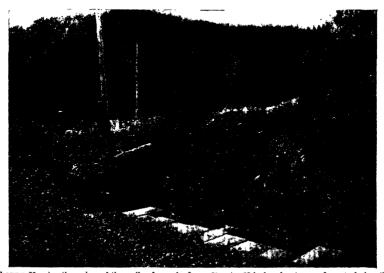


FIGURE 22.—Another view of the gully shown in figure 21. An 18-inch culvert was adequate before the drainage basin was burned over.

Erosion Follows Forest Fire

The effect of this destruction soon became evident. During the following year (1932) rains washed down the bare hillsides carrying

quantities of rock and earth to the valleys below. Deep gullies were washed in the bottoms, and homesteads were covered with silt,

rocks, and debris (fig. 21).

This destructive erosion was very pronounced along the road paralleling South Rapid Creek. A culvert in the road was washed out three times and the bridge which was finally installed had to be replaced (fig. 22). No such damage had occurred before the adjacent slopes were burned over. The stream bed was deeply gullied and large fan-shaped deposits of detritus varying from a few inches to 4 feet in depth were washed onto the homestead meadowlands (fig. 23).

It is significant to note that no gullying, depositing of soil and rocks, or washing away of culverts, bridges, and roadbeds occurred in other comparable situations where the cover on the nearby slopes had not



FIGURE 23.—Below the bridge shown in figure 22. The fan-shaped deposit of soil and rocks covers the meadow for a width of approximately 100 feet and to a maximum depth of 4 feet. Before the 1931 fire there had been no outwash from this gulch to damage the meadow. In the background is the burned-over slope.

been destroyed or damaged by fire. The contrasting areas provide a clear demonstration of the importance of keeping watersheds green if serious erosion is to be avoided.

M. W. THOMPSON, Forest Service.

ROSION Protection by Terracing Necessitates Run-off Water Disposal

Provision for the proper disposal of the run-off water at the ends of terraces is one of the most important and difficult problems encountered in terrac-

ing work. Pasture or timber areas sometimes make very satisfactory outlets, but careful attention must be given to maintaining the cover and to preventing the development of gullies at the foot of the slope where the water leaves the pasture or timber area. The water must be spread somewhat over the ground surface so as to prevent the con-

centration of sufficient water to cause gully erosion which may occur

even on pasture or timber land.

Natural watercourses protected by vegetation on comparatively gentle slopes make the best outlets. Erosion in a channel on moderate slopes ordinarily can be prevented by a dense growth of vegetation, but on steeper slopes it is often necessary to provide additional protection such as is described later in this article. In figure 24 is shown a broad shallow draw serving as a terrace outlet and protected by a thick growth of grass. It is important that the draw be protected by grass as far up its sides as the run-off water will reach, to prevent the possibility of the water washing a gully down the slope on each side of the grass strip parallel to the watercourse.

Natural watercourses are not always available because the water generally cannot be carried beyond the field being terraced. In order to make the best use of natural drainage outlets, it is sometimes



FIGURE 24.—Natural watercourse seeded to grass to serve as terrace outlet channel.

advisable for neighboring farmers to cooperate in terracing adjoining fields by running the terraces across property lines. If this cannot be done then it becomes necessary to take the water from the ends of the terraces directly down the slope along a fence or property line. Broad shallow ditches should be constructed to carry the run-off water from the terraces down the slope generally at a comparatively low velocity. Where narrow deep ditches are used high velocities occur and serious cutting or erosion results.

The upper end of the broad shallow ditches on moderate slopes can be protected by vegetation alone provided a good dense cover of grass is established. However, where the ditch is to carry the discharge from more than three terraces of moderate length, some other protection against erosion is likely to be needed in addition to the vegetation. Usually checks of nonerodible material are installed at intervals down the slope. Ordinarily one check is located at the end of each terrace and another between each two terraces, on moderate

slopes. On steeper slopes the checks should be spaced at closer intervals. These checks serve the double purpose of checking the development of small gullies in the bottom of the channel and of spreading the water uniformly over the bottom of the channel which reduces the velocity and thereby the erosive power of the water.

Checks are sometimes built of sod or sod bags, which are effective for small drainage areas and for ditches on moderate slopes. The sod strips should be not less than 30 inches wide. They should be watered occasionally when first set out to obtain the best results. When sod bags are used they should be buried in the channel with the upper sides at the same height and even with the bottom of the channel. The bags should be laid end to end across the channel without leaving gaps between them which may be done more easily if the bags are not filled quite full.



FIGURE 25.—Setting a lumber check in terrace outlet ditch.

One of the simplest checks consists of a 2- by 12-inch plank across the ditch buried with the upper edge even with the bottom of the ditch. Short planks are spiked at each end to form a protection to the side slopes of the ditch. A lumber check being set is shown in figure 25. Where dry weather is apt to shrink the soil away from the plank, it is recommended that a strip of sod about 12 inches wide be set across the ditch against the upper and the lower sides of the plank. These checks have been found to be effective on moderate slopes up to about 8 percent, for limited drainage areas.

In the installation of all checks it is important that grass be established on the bottom of the channel as soon as possible after the checks are built. Bermuda, bluegrass, and buffalo grass are very effective in controlling erosion in outlet ditches, and different grasses can be employed to advantage in mixtures suited to the different localities. Tall grasses and weeds should be avoided as much as possible, and where used should be kept cut down so that the discharge capacity of the ditch will not be materially reduced. If tall growth

is permitted in the channel, overflowing of the ditch banks will result which may start the development of gullies down the slope outside the ditch.

Another type of check that has been found effective is built of small loose rock or stone about the size of an apple. A trench 18 inches deep and 18 inches wide is dug across the bottom and side slopes of the outlet ditch and is filled with stone or rock carefully placed so as to make the volume of voids as small as possible. Usually one rain will fill the voids in the rocks with silt, which tends to form a bond between the pieces.

Erosion in ditches with large drainage areas or on steep slopes cannot be effectively controlled by the above-described method. Also.

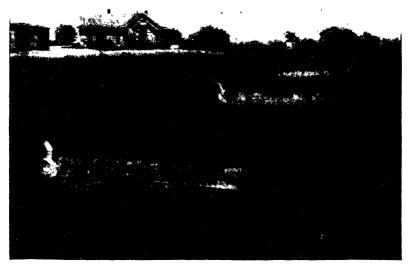


FIGURE 26.—Concrete check dams in terrace outlet ditch with Bermuda grass growing on sides and bottom.

it is not always practicable to build a broad shallow ditch and in some sections of the country it is not possible to obtain a satisfactory growth of grass in the ditches. Under these circumstances control of the erosion is usually accomplished by means of check dams built of permanent material and so spaced in the ditch that the crest of one dam is at about the same elevation as the foot of the next dam above. The object of spacing the dams in this manner is to reduce the fall of the ditch between dams and thereby the velocity and erosive power of the water. Figure 26 shows a broad shallow terrace outlet ditch in which erosion is controlled by low concrete dams, spaced as described above. Bermuda grass is growing on the bottom and sides of the ditch between the dams.

C. E. Ramser, Bureau of Agricultural Engineering.

ARM Laborers in United States Turn to Collective Action

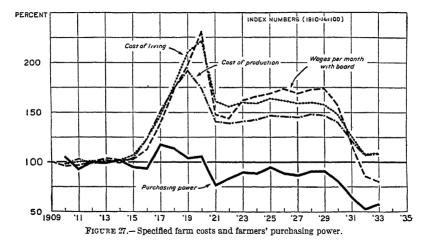
Because of their economic difficulties since 1929, farm laborers in this country have attempted collective action. Twenty-three strikes of agricultural workers were reported

in 1933, and 25 in 1934 up to the end of September. At the end of September 1934, 33 agricultural workers' unions had affiliated with the American Federation of Labor. Of these, 12 were chartered in

1933, and 19 in 1934.

The economic background of these collective activities is indicated in the farm-wage and farm-labor demand and supply situation of the years 1929-34. The discussion of wages will be confined to rates per month with board, because more farm wages are paid in this than in any other way. Most comparisons of wage rates are made with those of the pre-war years 1910-14.

Farm wages changed but little from 1909 to 1915. They rose during the war period to more than double pre-war rates; the rise



was nearly proportional to the rise in farm costs of living and in farmers' purchasing power. These relationships are indicated in

figure 1.

The post-war depression of 1921–22 forced farm wages back, so that about half the wartime increase disappeared. Yet farmers found it hard to pay their laborers because the purchasing power of farm products had fallen off. Laborers found that their wages had fallen even more than farm costs of living. In addition, the industrial depression forced many workers previously nonagricultural to compete for farm jobs.

Farm wages had risen 10 percent by 1923, and held the gain from then through 1929. In the same period farmers' costs of production rose slightly. Farmers' purchasing power gained through 1925, but did not make up the post-war losses; after 1925 it declined again. Farmers throughout the 9 years, 1921 to 1929, found wage charges harder to meet than before the World War. Laborers, on the other hand, received wages higher in comparison with farm costs of living than before the war.

Wage Decline Marked After 1930

The economic collapse which began in the autumn of 1929 did not greatly affect farm wages or costs until the following year. From then through 1932 its effect was marked. There were no seasonal gains to check the fall of farm wages until after April 1933. They fell to four-fifths of the average of the 5 pre-war years. The farmwage index declined to a third above that of farm-commodity purchasing power, and a quarter below that of farm costs of living. Farm-commodity purchasing power suffered a two-fifths drop to barely over half of that of the pre-war period. In 1932 it was 53 percent of the base period; a gain in 1933 brought it up to 58 percent.

From 1909 through 1920 farm-wage rates varied similarly in different parts of the country. Since then there have been striking regional differences. Farm wages in 1921 fell not quite 30 percent in the North Atlantic States, but in the West Central and Mountain States they fell nearly 50 percent. In general, these differentials have been maintained. Farm wages in the North Atlantic States in 1934 were close to or above their pre-war rates. Those of the other sections mentioned were decidedly below their pre-war rates, even after the

summer increase.

From the post-war depression of 1921–22 until the winter of 1929, the demand for and the supply of farm labor was below normal, with supply usually above needs for the country as a whole. By April 1933 farmers were offering only 3 jobs, where they normally offered 5. Meantime, the farm-labor supply increased. The excess was increased by the competition of men thrown out of other employment. There were 5 workers available in January 1933 for every 2 farm jobs available. Since then, the demand for labor has increased in both agriculture and urban industry. In the summer of 1934 there were only 3 workers for every 2 farm jobs.

During the last 5 years many farmers have been compelled to reduce the number of their laborers, or their wages, or both. Hired farm laborers have striven to hold their jobs lest they be unable to get other work. The inevitable result has been a heavy drop in farm wages. By April 1933 average farm wages with board had fallen to \$14.67 per month—less than three-quarters of the pre-war average. Some laborers worked for their board and lodging alone during the winter of 1933-34. There were reports during the summer that farmers were paying as little as 50 cents a day without board. Labor-

ers with families were particularly hard hit.

In most previous years farm laborers were able to obtain relief by finding employment in other industries. Between 1929 and 1934 they had practically no such opportunities. Instead, there was a farmward movement of city workers. Many farm laborers could not get work and had to appeal for public help. In parts of the country even farm operators had sometimes to ask relief.

Such was the situation that forced hired farm laborers into collective

action.

Farm laborers in some foreign countries have organized to a considerable extent. Those in the United States have made only a comparatively small start.

Difficulties of Organization

Important difficulties hinder the formation of labor groups among farm laborers in the United States. Most hired farm workers are the only employees on the farms on which they work. They are widely scattered. Many farmers hire no labor. Relations between laborers and operators on farms are usually closer and more personal than in other enterprises; difficulties are better understood and adjusted than in most urban industries. Working and living conditions and relations with employers may vary so greatly as to prevent much class interest among farm laborers. Many agricultural workers move from one locality to another, and from agricultural to other jobs, so that contact and cohesion with their fellows are temporary and slight. Normally, it is possible to obtain relief from unsatisfactory farm working and living conditions by moving to other work. Organization among hired agricultural laborers has usually been attempted only when large numbers of them in limited areas have much in common. and where living and working conditions and wages have been unusually poor.

There have been three principal periods of effort to organize agricultural laborers. (1) The American Federation of Labor shortly after 1910 effected organizations of migratory trade-union members and seasonal agricultural workers on the Pacific coast. Most of these

unions lasted only a short time.

(2) The Industrial Workers of the World formed the Agricultural Workers' Industrial Union. During the World War the activities of that body were widespread in the Wheat Belt and the far Western States. It met strong opposition. The membership was largely

migratory, and of late years it seems to have declined.

(3) The most recent period of activity in the organizing of agricultural laborers followed the crisis of 1929. Organization seems to have been made more easy in some parts of the country by the depression. Laborers have been less able to migrate. There has been a growth of cohesion. The movement has spread east of the Mississippi for apparently the first time. Unions have been formed among orange

workers in Florida and onion laborers in Ohio.

One indication of the extent of the movement is the number of charters granted in 1933 and 1934 by the American Federation of Labor to groups consisting principally of agricultural laborers. Some farm-labor groups have been formed without affiliating with national Several such attempts have been made on the Pacific coast. particularly among foreign-language groups of fruit and vegetable workers, such as the Spanish-Americans. Labor societies and unions have risen among sugar-beet workers of Colorado and nearby States. One was reported in Michigan. Probably the oldest and longest standing union of agricultural workers has been a union of sheep shearers operating largely west of the Mississippi and at stockyards and feeding plants near Chicago.

Causes of Some Strikes

Farm working conditions or wages, or both, have been the causes of some strikes. Most of these disputes have occurred on the Pacific coast; there have been others in Arizona, Colorado, Ohio, Florida, New Jersey, and Massachusetts. A strike of farm laborers usually affects directly less than 1,000 workers. One strike, however, affected 12,000. There has been violence in some of the disputes. The good offices of the Conciliation Service of the United States Department of Labor were called upon in 4 farm labor strikes in 1930; 1 in 1931; 5 in

1932; 8 in 1933; and 8 in the first 7 months of 1934.

Conditions driving farm laborers to organization have often been such as to make them receptive to radicalism. Employers and the public, on the other hand, have frequently actively opposed new labor boards because of suspicion and of self-interest. Recent developments in sugar-beet-growing sections have demonstrated, however, that properly conducted farm-laborers' organizations can be very helpful in service to their members and in their relations with beet growers, sugar companies, the public, and Government officials.

The past history of such movements indicate that when the present economic stress is over, the movement will decline in numbers and influence, but if the farm laborers through wise means can obtain improvements in their living and working conditions and in wages, the

effects will be far-reaching.

Josiah C. Folsom, Bureau of Agricultural Economics.

ARMING, Forestry, and Industry Profit from Land-Use Planning in California

In California the most critical conflicts between major land uses occur in the foothill belts of the Sierra Nevada and other mountains. A

recent comparative study in a typical mountain and foothill county by the California Forest and Range Experiment Station of the United States Forest Service and the Giannini Foundation of the University of California has brought out some very significant facts and led to conclusions which may be of use in similar difficulties elsewhere.

The Section Studied

Eldorado County, in the elbow of California, has a total area of about a million acres, of which the eastern half and a little more is within the mountainous virgin-timber belt, the division nearly coinciding with the boundary of the Eldorado National Forest at 3,500 feet elevation—about the upper climatic limit of agriculture. In the early mining days this was the most populous county in the State. Agriculture flourished with mining. Peaches cost \$3 apiece in gold. But mining declined, and agriculture with it. Then came lumbering. Last has come the specialization of agriculture in fruit orchards, which in its turn has fallen upon evil days. Population is dwindling. On a declining tax base, tax costs are rising, even without the influence of a world-wide depression. What can be done about it?

The lower, or western and southern portion of the county, which was mainly grassland from the beginning, is occupied by large livestock ranches that rely mainly on the high mountain ranges within the national forest for summer feed. The areas of agriculturally good soil are always scattered, in small patches. The larger part of those at suitable elevations for agriculture are devoted to fruit raising, mainly of pears. But all this cultivated land is less than 2 percent of the county area. Upward from Placerville, ranches are more and more scattered and isolated, and income is more precarious and

dependent upon supplemental employment.

Pine timber once extended down to the 1,000-foot level. It was largely cut off in the early mining days, but more than 125,000 acres have come back to second-growth timber, fairly even-aged at an average of 60 years and varying in density and thrift according to the quality of the soil and extent to which it has been burned over. The rest of the once-timbered area is now mainly covered by brush or

scrubby oak woodland.

This second-growth timber of the western part of the county already amounts to 1% billion feet board measure. If protected from fire and allowed to grow another 60 years, it could produce 4 billion feet, worth by that time probably \$20,000,000. The commercial timber area, largely between 3,500 and 6,000 feet elevation, contains a remarkable volume of fine timber constituting the largest single item of present wealth in the county. Above the 6,000-foot level the timber becomes less valuable for lumber production, and the chief value of the land is for wildlife conservation and recreation, which is growing more rapidly in volume and monetary return than any other land use of the county.

How the Study Was Made

A thorough survey of the physical lay-out resulted in a classification of the county into land classes based upon soil, topography (rough-



FIGURE 28 .- The Eldorado County foothill country. Grass, woodland, and brush,

ness), altitude, and climate, also a map of the vegetation cover of the county including virgin timber, second growth, woodland, brush, grass, and crop land, and of the area which once bore forest but is now without it, together with detailed data on the rate of growth of the timber on the different soils. This was followed by economic surveys of sample farms of every major class in the county; also of the irrigation districts, the industries, the power situation, with present and prospective reservoir development; of recreational use and of the county government, including roads, schools, and taxation; and the relation to all these of the national forests. The survey covered about

half of the area and volume of virgin timber in the eastern half of the county and most of the higher land (fig. 28).

What the Plan Provides

The result of this work was a division of the county into five use zones, each with a definite character of present use, and individual possibilities of improvement of its private and public returns.

Fruit raising is recommended to be held at its present expansion until better market prospects develop. The efficiency of livestock raising, it is pointed out, may be improved by larger home production of supplemental feed and by group organization to make possible a larger and more coordinated use of mountain range, progressively by elevation with the advance of the season.

One of the findings which affects widely the prospective best use of lands is that the second-growth timber area, by reason of its high timber-growing capacity, is much more valuable for timber crops than for grazing. It is shown that the ranchers, instead of continuing their long-tried efforts to improve this range by slashing and burn-

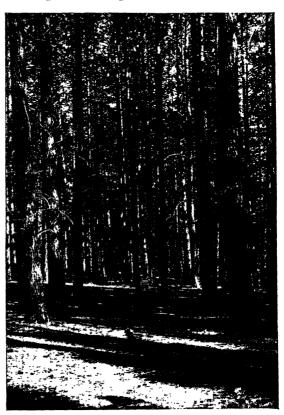


FIGURE 29.—A well-stocked stand of 60-year-old pine in western Eddorado County. This second growth is just entering the home stretch toward merchantability and its owners cannot afford to sacrifice its 60-year start by cutting it now to make poor grazing.

ing the young timber, will reap greater ultimate profits by protecting the second-growth timber. This will provide a home supply of box material for the fruit ranchers and will stabilize farming by giving the ranchers profitable supplemental employment (fig. 29).

In the areas of scattered occupancy toward the upper limit of agriculture, where the land is increasingly occupied by second-growth timber, it was often found that the settlers could not make enough money to live save by working on the county roads which were put in so that they could live there. And the maintenance of their little schools of 5 to 10 pupils cost as much as \$300 per pupil, as against \$70 per pupil in schools of 25 or more pupils in better populated districts.

It seemed clear that the whole county would profit by devoting this district to forest-crop production and gradually depopulating it—not by arbitrary dispossession, but by providing better opportunities for making a living elsewhere in connection with the sawmills and other

small industrial centers.

A definite part of the plan for the county is the stimulation of localized industrial development, under the guidance of a competent survey of opportunities and needs, so as to avoid misdirected promotion. Coupled with this will be an endeavor to assure the maintenance of renewable land resources, such as forests and grazing forage by getting the industries which use them to take from the land no more than its growth can supply. As the most profitable use to which they can be put, it is planned to devote the higher mountain lands to recreation, as is already the practice in the Eldorado National Forest.

The path to these ends is the coordination of private management with that already in practice upon the national forests. Such coordination in the interest of the whole county community will, it is hoped, result in soundness of economic and social structure. The leaders of the county have accepted the plan and through a strong

committee are moving toward its consummation.

C. L. HILL, Forest Service.

ARM-MANAGEMENT Research
Needed in Crop-Adjustment
and Land-Use Planning

All change and readjustment in agriculture involves, directly or indirectly, judgment and action by the

individual farmer. The most important test of the desirability of any proposed adjustment is whether or not it adds to the farmer's net financial income or otherwise raises his standard of living. Weighing the advantages against the disadvantages of changes, arriving at decisions, and then carrying out the decisions, constitute the management function in the farmer's job. An understanding of this management function is vital to the successful shaping and administration of adjust-

ment programs.

In the earlier years of farm-management research its chief objective was to find the profitable forms of organization for farms and the most effective methods of farm operation, with a view to using the results in educational effort to make poor farmers good and good farmers better: in other words, to make farmers more efficient in the restricted sense of that term. Now with the development of governmental policies and programs for agriculture another objective of prime importance is in evidence. It is to obtain and make available to responsible public agencies the essential understanding of the farm-management function, and of the conditions under which the farmer operates. management research, to be effective in reaching this objective, must give those who conduct it an accurate and detailed understanding of what the farming actually is in the area being studied, and through such understanding give them a vision of what the farming can be with the best adjustments that are possible and practicable. also give an understanding of the forces and conditions that have made the farming what it is and that create its better possibilities—as yet unrealized. Only through such understanding can the effects of proposed measures for improvement and the effects of evolving economic conditions and forces be correctly judged. The considerations leading to managerial decisions are as important to a true understanding of

agriculture as the results of the decisions themselves.

All this requires that farm-management research avoid the danger of being too formal and stereotyped. It cannot be carried out successfully merely through the gathering and analysis of statistics. Important as figures and their careful analysis are, the farm-management research worker must think and live himself into the farmer's own situation and problems through adequate first-hand contact and observation, or his results will be sterile.

Farm-management research as thus conceived bears a vital and direct relation to public agricultural programs. This program is creating new considerations which the farmer must take into account in his own planning. They vitally affect the farmer's mode of utilizing his private resources. It is important that the Government's plans involving these changes be tested and approved by the criteria of sound farm economy.

Farm-Management Phases of Crop and Livestock Adjustment

The first great phase to be developed in the new public program for agriculture was crop and livestock adjustment. The leaders responsible for the development of this phase of the program realized from the beginning the importance of gearing it closely to the nature of the farm and the managerial problems of the farmer. However, haste was imperative and only limited recognition could be given to these considerations. With the first year of experience as a background, planning for future programs is being done with consideration of the effect of the details of such a program on the internal organization and operation of the farms affected.

The farmer's net return from operation is, of course, a function of three variables, volume, prices, and costs. The approach of the present adjustment program is primarily from the price side. It is deemed imperative to secure for the farmer more adequate prices in order that the income side of his balance sheet may be restored to a more favorable condition. However, in the long run the cost side of the farmer's equation cannot be ignored. In a broad way costs are tied up not only with the prices the farmer must pay for the things he produces with but also with the efficiency with which these things are used on the farm.

Costs Fixed and Variable

It is important to consider the nature of the various cost elements entering into the farmer's production. They may be broadly classed into two groups, those which are fixed and those which are variable. In this sense the fixed costs are those which, within a given year, or longer, do not vary with the volume of the farm commodities produced. The variable costs, on the other hand, are those which tend to rise and fall pretty much in proportion to the volume of product. One of the most important considerations from this point of view in planning an adjustment program is the effect which the program itself will have upon these two classes of costs. Without sacrificing the main objective of the program, namely, the adjustment of supply in its effect upon prices, it is extremely desirable so to shape the details of the program that it will be easy for the farmer to participate in terms of

his internal organization and operation particularly with reference to

costs.

By way of illustration, let us take the case of a Great Plains wheat farmer. His fixed costs consist of interest on his investment in land. interest and depreciation on improvements on his land and on his working equipment, and his own labor and that of his family. His variable costs are made up largely of expenditures for fuel and oil. for repairs for his equipment, and for such hired labor as he must engage. It has been determined from recent studies that, with the equipment now in common use in that area, the best use of the farmer's resources can be realized on such farms by the proper adjustment of tillage and harvesting machinery to the power unit, let us say, a 15-30 tractor, together with the adjustment of acreage that will realize a maximum use of this outfit of equipment in carrying out the most effective production operations. A farm consisting of from 800 to 960 acres of which about 600 acres are in wheat seems to represent a best adjustment of this unit of equipment to land and to the farmer's labor. The major part of the cost in the operating of such a unit falls in the fixed-cost class. From the point of view merely of efficiency, a reduction of 10 to 20 percent in the wheat acreage means a lower utilization of this labor and equipment, and hence a decline in efficiency of use. Granting that the benefit to the income side of the farmer's business amply justifies this sacrifice in use, the problem remains of so adjusting the program, at least in its long-time aspects; as to make the sacrifice in utilization of his labor and other resources, and its effects on costs, a minimum disadvantage on the production side.

But No Costs Absolutely Fixed

In the long run no production costs are absolutely fixed. As machinery and power units become worn out and have to be replaced, and as the farmer has time, with the aid of Government agencies, to replan and reorganize his farm, these disadvantages can be reduced to a minimum. It is important to recognize these considerations at the outset and to provide in the planning definite means of their adjustment. In such planning the results of effective farm-management research have great utility.

The effect of proposed adjustments in one region may have important effects on the farming in other regions. There is much division of labor regionally in the complete production of some farm products as they finally reach the market. For example, the Corn Belt farmer buys feeder cattle and sheep from the rancher of the West, and raises feed for the dairy farmer of the Northeast. Due account must be taken of how proposed adjustments affect the individual farmer's managerial problems, not only in the region where the specific adjust-

ment is proposed, but in the other regions affected.

Another matter which is receiving increasing attention in plans for the future is that of giving the farmer a more flexible contract under which he can work out his adjustment with due consideration to his own peculiar farm conditions. A sliding scale in the percentage reduction has been suggested as one means of making these programs more feetble and more applicable to the varying conditions on farms. The combining of crops into groups representing a single acreage base, together with the requirement of a reduction within certain maximum and minimum percentages from this base, might be one way of

realizing this desirable flexibility.

Another consideration of first importance, and one which is receiving increasing attention in the evolving plans, is that of soil conservation. Too often the farmer's own program has involved a sacrifice of basic productivity in the light of immediate needs. The Government agencies are recognizing an opportunity in the adjustment program for governmental help to the farmer in correcting this evil. In this connection the nature of public effort needs to be determined through an adequate understanding of the farm organization and operation in the areas involved.

Farm Management in Land-Use Planning

Land-use planning is another major element in the general readjustment program for agriculture that involves many vital farm-management considerations. From the farm-management viewpoint it appears that there are two fundamental objectives in this program as it is being evolved. The first is a better conservation of natural resources basic to the agricultural industry, and the second is the more economic use of such resources currently, in order to provide better support for an adequate standard of living for those engaged in farming. These objectives have far-reaching importance both from the point of view of the public and of individual farmers.

In this phase of the Government's program for agriculture, the public is assuming responsibility for the correction of much evil that has crept into the utilization of agricultural land through the working out of the previously prevailing land policy of the country which was based almost entirely upon private initiative in the selection, development, and use of farm lands. The program involves a major classification of land with reference to suitability for various types of uses; but, more important, it involves action facilitating the shifting of lands

from undesirable uses into more suitable uses.

In both of these phases of the land-use program important farmmanagement considerations enter. Classification itself must be based on certain criteria or tests. Part of these tests relates to the public welfare arising out of its vital interest in the most economical use of the land itself; but part also relates to the providing, on a most economical and adequate basis, for the publicly financed means, such as roads. schools, and other facilities, for public service. Other tests, equally important, center in the farm economy itself. No use of land is desirable either from the social or individual point of view that does not provide for its users an adequate basis for the support of a good standard of living. This implies the necessity of farm-management tests. No land now in use in farming can be classified as too badly fitted to its present use without adequate consideration of whether or not, under the best systems of farming possible, it can support a successful farming program. Nor can other lands proposed for development for farming purposes be so designated without these same farm-management tests as to whether successful and adequate programs of farming can be derived to fit this type of land. It follows that in the program of land classification an adequate understanding of the considerations involved in the organization and operation of farms be made an important basis of the classification.

Relocation of Farm Families

The plans for action in this broad program involve very definitely the shifting of farmers from lands which may prove on examination too poor for their present use and the establishment of these farm families upon other lands which after due consideration may prove to be adequate for successful farming. This is the most vital phase of the program. Financial and personal considerations vital to the farm families being dealt with are involved. The agencies must be as sure as it is humanly possible to be that the new establishments will afford the opportunity which is intended. This should be tested by realistic considerations of what type or types of farming can be set up and operated in the new location, and what approximately, they may be expected to yield over a period in the way of money and living under

a given projected economic situation.

For example, it has been proposed that in many parts of the country the conservation objectives in the way of preventing erosion and the building up and maintenance of soil fertility cannot be reached under the present system of farming, and that a considerable degree of consolidation looking toward larger farm units is necessary because the systems of farming which do promise better results in the direction of conservation, involving less grain growing and more hay and pasture, require larger areas for the support of a farm family. Closer examination in many areas reveals the probability that consolidation may not be feasible, that the remedies for the present difficulties must be sought in the direction of reorganization of cropping and livestock systems pretty much within the limits of the present size of farms. This all involves a most careful examination of the specific conditions within each given area from the point of view of the internal organization and management of farms.

C. L. Holmes, Bureau of Agricultural Economics.

INENESS and Maturity are Important Elements in Cotton-Fiber Quality

Strength of cotton fiber is an important factor in the strength of yarns and fabrics, although in the past its importance may have been over-

emphasized. It is generally less recognized that fineness and maturity of fiber are also important elements which materially influence the

strength and other properties of the manufactured products.

Fineness refers to the width or the cross-sectional size of the fiber. This differs greatly among fibers of American upland cotton (fig. 30). Methods of measuring fiber fineness generally involve determination of either the so-called "diameter" (in the case of cotton fibers the "ribbon width"), or of the weight per unit of fiber length (approximately proportional to the average area of cross section of the fiber wall). In general, the latter determination is the more advantageous as the resulting measure is more nearly comparable with that for yarn fineness.

Maturity, on the other hand, refers to the fiber-wall thickness, or, more accurately, to the ratio of actual wall thickness to the maximum wall thickness that is possible if the cotton fiber were permitted to reach its maximum growth. Figure 31 shows American upland fibers of varying thickness of walls. It will be evident that due to different

degrees of fineness, actual wall thickness may vary for the same degree

of maturity.

Fineness has long been recognized as an important element of quality in wool, silk, and more recently, rayon. It has not received the same recognition in the case of cotton. Possibly the close relationship

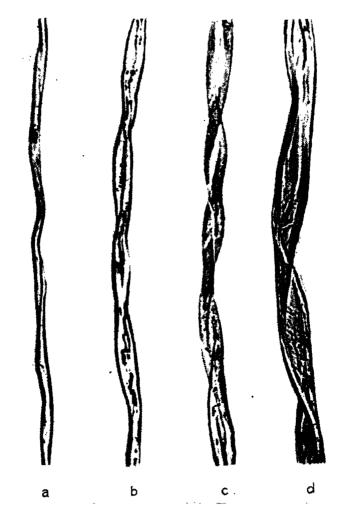


FIGURE 30.—Variations in fineness of fibers from American upland cotton. a, very fine mature fiber; b, fine mature fiber; c, medium mature fiber; d, coarse mature fiber. \times 475.

between fiber fineness and staple length in cotton made the distinctive effects of these two properties less noticeable, since the longer staples generally meant finer fibers. The distinction was demonstrated by studies in which long-staple sea-island cotton, which possesses the greatest degree of fineness of any cotton, was cut into shorter lengths to simulate 15/16- and 1-inch cottons of natural growth which are nor-

mally less fine. The 22s yarn spun from the 1-inch staple cut from this sea-island cotton showed an average skein strength of 146 pounds, a figure 51 percent higher than the average of a large number of American upland cottons naturally of this staple length and 27 percent higher than the strongest yarn ever manufactured from this staple length group in the spinning laboratory of the Bureau of Agricultural Economics.

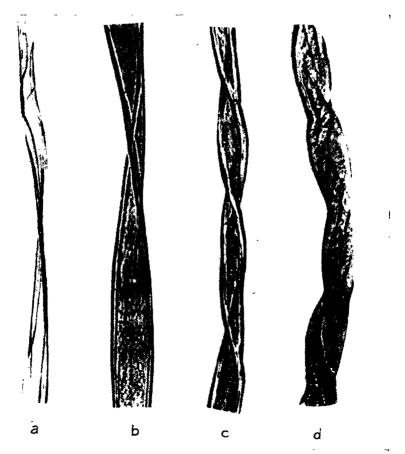


FIGURE 31.—Variations in maturity of fibers from American upland cotton. a, very immature or thinwalled fiber; b, immature or thin-walled fiber; c, mature or normally developed fiber; d, abnormally matured or over-thickened fiber. + 475

The relationship of fiber fineness to length, however, holds only in a general way. Fineness of fiber has been found to vary materially from fiber to fiber of the same length, and from length to length of the same sample; it varies also with variety, soil, and growth conditions of the plant.

Why Fineness is Important

Fineness is important (1), because it determines the pliability of the fiber; that is, its ease of bending. Anyone who has examined yarns or fabrics made of fibers such as sisal, hemp, jute, and horsehair recognitions.

nizes their stiffness and coarseness and their general lack of adaptability and usefulness for certain purposes. For example, cloth made of such coarse fibers is not very suitable for clothing; it is heavy, harsh, and irritating to the skin. With increasing coarseness of fibers, rigidity and stiffness increase much more rapidly than does the size of the fiber. For example, for a given shape of fiber if the size is doubled, the rigidity and stiffness is approximately quadrupled. If the size is tripled, the rigidity is increased nine times. Thus fineness, as measured by the weight per unit of fiber length, has a magnified influence on the flexibility of the fibers and presumably also on the softness and

flexibility of yarns and fabrics made from them.

Fineness of the fiber is important (2), because it determines the average number of fibers in varn of given count and in turn the varn strength. This is because the count or size of a yarn is based on the weight per unit of length and a definite length always contains a definite weight of fibers. Therefore, the finer the fibers, the greater the average number in sections of the varn. The average number of fibers per section of yarn seems to influence yarn strength in three ways: (1) Through their greater flexibility, the finer fibers, when twisted, have greater binding power and the frictional potentialities can be used to greater degree. (2) A given number of fine fibers will make a finer varn than the same number of coarse fibers. In the illustration above cited of the short-staple cottons made artificially from sea island, the 11/16-inch cut fiber could be spun easily into 60s yarn of very good strength, an achievement not previously duplicated, so far as is known, with cottons of this natural staple length. Frequently cottons of 1% or even 36 inches in staple are spun into 60s yarn only with difficulty. The success of the results with the sea island was undoubtedly associated with the larger average number of fibers in the section of varn than would have been present in the usual cotton of 15/16-inch staple length. (3) The surface substance of the fibers seems to be stronger than the interior substance, due to a "skin effect". and consequently the finer fibers, having proportionately more surface, should contribute greater strength to the varn.

Fineness of cotton fibers is dependent on two major factors. One of these is the natural or inherited tendency of the fibers. Just as some breeds of horses are naturally larger than other breeds, so some species and varieties of cotton have naturally larger, coarser fibers than other species and varieties. For example, sea-island cotton belonging to a different species than the usual American upland varieties has naturally a finer fiber. It is entirely probable that the natural fineness of cotton fibers may be materially altered by breeding.

Growth Factors in Fineness

The second factor that determines the fineness of cotton fibers is that of growth. All factors such as soil, moisture, plant food, climate, and the like, which affect plant growth may be expected to influence also the thickness of the fiber wall. This is the effect of maturity on fineness. During its first 25 to 30 days of growth a cotton fiber elongates rapidly but its walls remain very thin. The type of growth then changes and during the next 25 to 30 days the length changes but little, but the walls thicken by increase of their secondary deposit. If this second period of growth is arrested, or if the climatic conditions restrict it, the fiber will not produce as thick a wall as it otherwise would

have done. If only a small amount of secondary deposit is laid down, the wall will be thin and the fiber relatively immature and fine. However, if conditions of growth are favorable, deposition of cell-wall substance will continue and the wall will become thicker and the fiber relatively more mature and coarser. Relatively fewer of the well-developed mature fibers will be required in the cross section of a yarn of

given size, than of the lesser developed, immature fibers.

Although cotton fibers from varieties that normally produce medium or coarse fibers may be fine as a result of immaturity alone, this type of fineness is not necessarily advantageous from the standpoint of ease of spinning and quality of yarn. Too great fineness from this cause may introduce distinct difficulties into the spinning processes, and contribute to nep formation and to unsatisfactory dyeing properties of yarn and fabric. Thus, while a given degree of fineness corresponds always to the same average number of fibers in a yarn of given size, there is a qualitative difference in fineness that depends upon the thickness of the fiber walls. Because of the flattened form of its cross section, an immature fiber should be, theoretically, much less rigid or stiff than a mature fiber of the same wall cross section. Perhaps this explains the seemingly greater tendency for thin-walled cotton fibers to form neps as compared with thick-walled fibers.

From the theoretical standpoint and assuming identical composition, it might be assumed that a yarn made from immature fibers should possess the same strength as one made from mature fibers, fineness and other factors being the same. Or, if the greater flexibility of the thin-walled fibers is advantageous, the yarn made from immature fibers might be even the stronger. Limited observations indicate that this relationship is by no means simple and that considerable work will have to be done before the relationship of fiber maturity to yarn

strength can be determined.

ROBERT W. WEBB and CARL M. CONRAD, Bureau of Agricultural Economics.

OREST Cover Proved a Controlling Factor in Flood Prevention Man's mistreatment of the soil or of its natural forest or other vegetative cover as a cause of increasingly destructive erosion has been convincingly pointed

erosion has been convincingly pointed out by studies recently conducted by the Forest Service in California. In these studies large soil tanks and ½0-acre plots in the mountains produced evidence that vegetation not only obstructs and retards the run-off of surface water, but also, by means of the leaf litter, and the action of the roots, keeps the topsoil so porous that a large proportion of rain water percolates continuously into the soil to join underground supplies. Litter-covered soil was found to absorb 5 to 10 times as much water as that absorbed by bare soil. Run-off was just the reverse—10 to 30 times as great from bare soil as from litter-covered soil. Generally 100 to 1,000 times more soil was swept away from bare soil plots than was eroded from forest-covered plots, and the rate of erosion increased as the intensity of rainfall increased.

When these results are applied to field conditions, the conclusion is that gentle rains, if well distributed through the season, cause little or no damage on newly burned areas, since they do not bring sufficient water at any one time to produce erosive run-off. Heavy rains, however, with an intensity of 1 inch or more per hour even though of brief duration, quickly puddle the surface soil, seal the soil pores, and start a rapid process of gully erosion. When this stage is reached, the excess water, unhindered by the usual chaparral cover with its accompanying carpet of leaf-litter, rushes down the barren slopes gathering up soil and rock fragments in ever-increasing size and volume until it reaches the bed of the stream. There the accumulated flow is soon swelled to a raging torrent, sweeping all before it, scouring the channel, snapping trees from their roots, plucking huge boulders from deep embedments, and finally surging forth upon the valley floor in great destructive waves of mud, debris, and boulders.

In southern California, where the mountains are covered with an "elfin forest" of highly inflammable chaparral, frequent forest fires and the characteristic heavy rainstorms of the winter season are re-



FIGURE 32.—This Montrose cottage is one of the 400 homes wrecked by the New Year's flood from the fire denuded watershed. The great gully in foreground carried away lawn and garden.

sponsible for numerous highly localized "burned area" floods. On the last day of 1933 there occurred in the Verdugo Creek watershed of Los Angeles County a flood which, because of the urban development in its path, was the most tragic and destructive single flood since the white man came to California.

A storm of record volume, beginning on December 30, a little more than a month after a severe forest fire had swept the mountain slopes above the valley and reduced their chaparral cover to ashes, poured 12 inches of rain upon the steep and barren slopes within a period of 56 hours. The ensuing mud flows reached their climax at midnight on New Year's Eve and swept through the towns of La Crescenta, Verdugo, and Montrose in numerous streams with such force that boulders weighing from 20 to 50 tons were carried thousands of feet and deposited on the city streets. In each stream path suburban homes were wrecked and their gardens either gouged away by deep gullies or buried under mud and boulders (fig. 32). In the small resi-

dential valley of La Crescenta 34 persons were swept to their death, and property, including more than 400 homes, was destroyed or dam-

aged to the extent of \$5,000,000 (fig. 33).

Such torrential floods are usually reported as having been caused by a cloudburst, regardless of the condition of the watersheds from which they issue, and in the absence of adequate data it is difficult to prove the true causes. In this case, however, a study of rainfall, run-off, and erosion throughout the storm area was immediately undertaken by the Forest Service and Los Angeles County flood-control authorities, and information obtained that permitted comparison of storm results in the La Crescenta area with those in the surrounding territory. It was found that the rainfall was remarkably uniform over a foothill and valley area approximately 20 miles wide by 50 miles long. Some 30

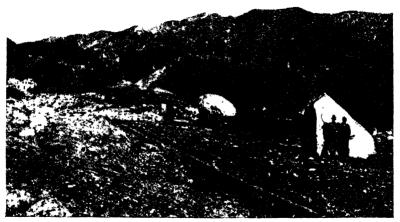


FIGURE 33.—Boulders weighing 60 tons each deposited on a street of La Crescenta by the New Year's flood from Dunsmere Canyon.

stations in the area measured an average rainfall of 13.03 inches, while the average on the burned watershed was 12.56 inches.

Run-off Greater from Burned Area

The peak run-off of water in streams from the burned area was conservatively calculated at 500 cubic feet per second per square mile, plus at least an equal volume of solids, making a total flow of 1,000 second-feet per square mile of watershed (fig. 34). In striking contrast, the simultaneous peak flow from the well-forested Arroyo Seco watershed, contiguous to the burned area, was only 58 second-feet per square mile, although rainfall in the Arroyo was 14.85 inches, or more than 2 inches greater than in the burned area. In the San Dimas Experimental Forest, 20 miles east of La Crescenta Valley, several well-forested unburned watersheds yielded peak flows averaging only 53 second-feet per square mile from 10.8 inches of precipitation.

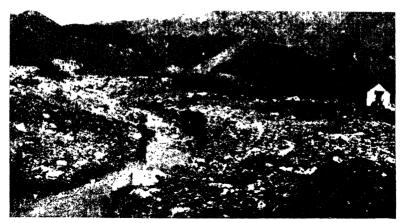


FIGURE 34.—Dunsmere Creek, ravaged by flood from the burned area. Line of boulders near the building indicates extent and force of the torrent. All trees were torn from the stream banks, and rock-mattress check dams were swept from its bed. Man stands near the remains of one of the wire-bound dams. Compare with figure 35.

Enormous Erosion from Burned Area

Surveys showed that 659,000 cubic yards (more than a million tons) of soil and boulders were caught in debris basins or deposited on the Crescenta Valley floor, in addition to unknown quantities of lighter material carried to the ocean. These figures are more significant in that the burned area of 7 square miles comprised only one-third of the Verdugo Creek drainage basin. With ample allowance for material scoured from channels beyond the burn, this shows an erosion rate of



FIGURE 35.—Arroyo Seco Creek, undamaged by storm run-off from forest-covered watershed adjacent to the burned area. White line shows high-water mark of the New Year's storm. The water, being clear and controlled, was harmless. Compare with figure 34

at least 50,000 cubic yards per square mile of burned watershed during the storm.

In the unburned watersheds, however, erosion debris caught by reservoirs of the experimental forest amounted to only 52 cubic yards per square mile. Erosion measurements from Arroyo Seco were not obtainable, but forest officials reported that the high water of that creek was practically clear and that the small amount of silt which it carried came directly from the gullying of a newly-built highway in the canyon. The condition of the creek bottom after the storm (fig. 35) verifies this observation and indicates that erosion rates in the Arroyo Seco must have been very similar to those in the San Dimas area.

Forest Fires Must be Prevented

These records show that removal of the forest cover by fire increased the run-off rate of the heavy New Year's storms more than eight times the normal, and accelerated the rate of erosion nearly a thousand times, raising it from a trifling and completely harmless amount to quantities of enormous destructivenss. The La Crescenta burn was only 7 square miles, but in Los Angeles County alone there are 1,300 square miles of mountain area subject to fire and capable of building up disastrous floods. A considerable amount of developed property in the county has been safeguarded by dams and other costly flood-control structures, but outside the protected sections property to the value of \$300,000,000 is still menaced by fire and flood.

Leading engineers of southern California have joined with foresters

in the following conclusions:

(1) The native brush cover in the mountains of California affords a natural control against excessive run-off and destructive erosion.

(2) The La Crescenta disaster resulted from denudation of the watershed by the November fire, rather than from the heavy rainfall.

- (3) The continued effectiveness of flood-control reservoirs requires the prevention of excessive debris deposition therein; this can be economically accomplished only by a good cover of vegetation on the watersheds.
- (4) The total benefits deriving from the natural cover of southern California mountains are such that no reasonable expense should be spared to protect that cover from fire.

C. J. KRAEBEL, Forest Service.

OREST Removal Affects
Local Climate and
Growing Conditions

Any modification of climate caused by the removal of the forest is of chief interest to man through its effect on the vegetation which follows the forest,

particularly that part of the vegetation ultimately used for food or for construction. On lands unsuited for agriculture it is the second-growth forest—the source of our future wood supply—which must survive the local climate as modified by the removal of the original forest.

Comparison Between Wooded and Denuded Areas

Studies made by the Allegheny Forest Experiment Station in the woods and in cut-over areas nearby show to what extent the climatic agencies which profoundly affect the growth of vegetation, such as light, wind, moisture, and temperature of air and soil, may be modified

in restricted localities by removing the original forest.

Degree of light intensity is the most obvious difference between a forested and treeless area. The extent to which sunlight is screened off by the tree tops depends, of course, upon the age and species which make up the forest. Rarely, however, will shade by itself prevent the establishment of tree seedlings. On the other hand, lack of shade in a cut-over area may cause the soil to become so hot and dry that young seedlings cannot survive. Soil-surface temperatures as high as 150° F. have been recorded in the cut-over areas when surface temperature in the woods nearby was less than 100°.

Such extreme soil-surface temperatures usually occur when the air temperature is high, and air temperature is usually higher in the cutover areas than in the woods. While maximum air temperatures alone
seldom cause death or injury to tree seedlings, they do result in greater
transpiration from leaf surfaces and in greater evaporation from the
soil. As a result, the plant must draw water more rapidly from a soil
that is becoming increasingly dry. Eventually the demand exceeds

the supply and the plant dies.

Soil moisture must, of course, be replenished by some form of precipitation and, whether or not the forest affects precipitation over wide areas, it certainly affects the amount of water which reaches the ground within itself. Studies by this station have shown that on the average about 15 percent of the precipitation is intercepted by the tree crowns. This is, however, more than offset by the decreased evaporation from the soil in the woods and the readier penetration of the precipitation in forest soil. Furthermore, the far greater run-off of precipitation in the open causes a corresponding increase in soil erosion.

Both evaporation and soil moisture have been measured simultaneously in the open and in nearby woods during a 6-month period. The soil in the woods at 6 and 12 inches below the surface had on occasions twice as much moisture as that in the adjoining cut-over area, and evaporation in the woods over a period of 6 months was only 63 percent

of that on the adjoining cut-over area.

Evaporation is retarded in the woods by decreased wind movement. At one woods station used in this study, wind velocity dropped from 3.0 to 1.6 miles per hour in May after the leaves came out; above the tree tops the decrease was from 11.6 to 8 miles per hour from April to May. Because this modification of wind velocity benefits adjoining cleared areas or fields, trees as windbreaks have become a necessary

part of agriculture in some sections of the United States.

A decrease in wind velocity due to the presence or absence of a forest will in turn modify air temperature and minimize the effect of extreme winter temperature. Minimum air temperature may be in itself a critical factor in the death or survival of vegetation. For a period of 1 year the minimum air temperatures in the woods and in an adjacent cut-over area were compared. During this period the mean minimum was lower in the open than in the woods every month in year, with an actual minimum for each month of 8° or 10° F. lower. On one occasion vegetation surrounding the instrument shelter in the open was killed by a late June frost, but there was no evidence of frost damage in the woods nearby.

Another station was located in a "forest pocket" on a cut-over area which, until a few years ago, was heavily forested. The earlier pres-

ence of dense woods was evidence that minimum temperatures here were never critical before the tract was logged, even though they were lower than in the immediate vicinity. Since the cutting, such extreme minimum temperatures have occurred here during the growing season that the young trees coming up on the site have repeatedly been damaged by frost. It is now possible that this area will remain for a long time without a vigorously growing young forest because of the complete removal of the old forest.

Partial Cutting Suggested as a Remedy

It has been learned by actual measurements that even in a very open forest the various factors which, when combined, make up the climate of that locality will be less extreme than in totally denunded areas in the same vicinity. Hence, if the best all-round growing conditions for a future timber crop are to be maintained, it is apparent that the forest should be only partially removed. The rather open forest which results from this type of cutting will certainly have a favorable influence on the local climate.

O. M. Wood, Forest Service.

OREST-TAXATION Reforms
Dependent on Correction
of General Tax Defects

The burden of taxation upon any group or any person is the resultant of two factors: (1) The total amount that must be raised by

taxation, and (2) the methods by which this amount is distributed among the taxpayers. The amount is fixed when the appropriate legislative body, State, county, or town, determines the functions to be performed by the government and the cost thereof. The second is a matter of equitable distribution, involving methods of taxation and the effectiveness of tax administration.

Taxation of American forests is principally in the hands of the States and their local subdivisions and is imposed chiefly through the property tax. If the taxes borne by forest property are burdensome, the cause must be either that the total tax levies are heavy or that forest property is discriminated against in the structure or administration of the taxing machinery. Giving full recognition to such unfair discrimination against forest property as does exist, the investigations of the forest taxation inquiry clearly indicate that the predominant cause of heavy timber taxation today is the heavy cost of State and local government.

The cause of next importance is faulty administration of the property tax. The theory of the property tax is beautifully simple—distribution of the cost of government in proportion to the value of taxable property possessed by each contributor. In its operation, however, the American property tax has developed defects so serious as to call down the reproaches of virtually all tax students, at home and abroad. Assessment is the heart of the property tax, and it is chiefly the imperfect functioning of assessment that has made the property tax a farce in so many places. In almost any rural district, can be found parcels of property assessed at 2 or 3 times their true value, while others get off at a quarter or less—and some escape the assessor's notice entirely. Obviously, to the extent that assessment fails, the

property tax becomes a travesty of justice, and there is evidence that forest property is frequently thus discriminated against.

Remedial Measures Available

The heavy cost of State and local government and the imperfect administration of the property tax thus furnish the principal causes of the unduly burdensome taxation under which forest property in many parts of the United States is suffering. For the first cause the remedy is obvious—reduction of the cost of State and local government, particularly in the forest regions. For the second, reform of assessment, as well as improvement in other phases of property-tax administration, is indicated. Limitation of space does not permit detailed discussion of these remedies. Appropriate measures are available, however, whose adoption promises good results.

Reforms along these lines are not confined to owners of forest property. If those who are seeking less burdensome forest taxation look merely for some special device to shift the burden, the natural opposition of all other groups is encountered; it is forest-tax reform against the field. But all taxpayers are sufferers from the basic causes which make forest taxes heavy. And, when all taxpayers see this and work

for the clearly indicated remedies, results will come.

Successful attack upon the forest-tax problem along these lines would go a long way toward its solution. But not quite the whole way. There is a third ground of complaint, arising from the inherent nature of the property tax, which affects forestry in particular. This is a technical matter, and it will be sufficient here to state the conclusion that the property tax, by discriminating against any use of land which involves deferment of income, tends to increase the area of land that cannot be used economically, under private ownership, for growing forests.

This reference to deferment of income is not intended to obscure the importance of progress toward organizing forests so as to produce a regular annual income. When such condition has been attained, forestry suffers no peculiar disability under the property tax, and there is no special forest-tax problem. But the annual-sustained-yield forests would still suffer, with all other classes of taxable property, the adverse effects of taxation resulting from heavy costs of govern-

ment and faulty administration.

Proposed Methods of Forest-Tax Reform

Escape from the inherent discrimination of the property tax against the use of land for growing timber must be sought in tax measures relating especially to the forests. Past experience with such special forest-tax legislation has not developed a sound plan. Therefore the forests taxation inquiry, after a searching study, both theoretical and factual, has formulated and recommended three practicable methods of modifying the property tax. These plans are based, it is believed, on correct principles. They are fully described in a comprehensive report of this inquiry.

It has been suggested that the solution of the forest-tax problem requires (1) reducing or at least limiting the cost of State and local government, (2) perfecting the assessment of the property tax, and (3) providing some modification of the property tax which will adjust

it to the peculiar nature of the deferred-yield forest. Either of the first two reforms would accomplish its full effect whether the third were adopted or not. The third reform, on the contrary, while doubtless worth securing by itself, would be of limited usefulness, and might even fail entirely of beneficial results, if nothing were accomplished in the way of reducing governmental costs or enforcing the strict observance of sound assessment methods. It should always be remembered that no special forest-tax plan is to be regarded as the solution of the forest-tax problem. It is simply one—and probably the least important one—of the three parts which make up the whole program of forest-tax reform.

FRED ROGERS FAIRCHILD, Forest Service.

ORESTRY Extension Work
Aids Farmers to Earn
Profits from Woodlands

Through a broad program of education and practical assistance, farm-woodland owners have been aided in solving their numerous

forestry problems, which range from reclaiming eroded land and thinning young stands of trees, to cooperative marketing of timber, fur,

and other products.

Farmers own approximately 150,000,000 acres of woodland and produce enormous quantities of timber products for commercial and home needs. Because of lack of information regarding forestry practices applicable to farm forests, thousands of acres of valuable timberlands have been cut without regard to conserving the stand or to growing another crop of trees, or wildlife. In some sections stripping the land and degrading the stand by removal of the better trees have left cutover lands of little value and without prospect of another timber crop

for many years.

To assist farmers in meeting this situation, the State extension services, with the cooperation of the Federal Extension Service and Forest Service, are carrying projects in farm forestry. The Federal Extension Service cooperates with the States in the employment of extension foresters, who serve as project leaders. During the past year 33 States and 2 territories employing a total of 39 extension foresters carried on forestry programs with farm owners through county agent organizations. Demonstrations in the woods (fig. 36), meetings, and many other educational means have been used to assist farmers in their adoption of improved timber practices and to encourage them to handle their woodlands on an economic basis that will fit in with good farm management and wildlife conservation. Invaluable cooperation has been given by State forestry departments, experiment stations, and other public agencies and by private agencies.

The farm woods have been an important factor in helping farmers to meet their timber needs and to supplement the farm income. During the present emergency farmers have used their woods as a staff to lean on when other crops have failed to produce an adequate cash return. Although timber markets have been at a low ebb, much has been accomplished in assisting farmers with the marketing of farm-timber products. Marketing problems have been studied by extension foresters. Lists of buyers and marketing reports have been issued, marketing activities have been organized, and literature on marketing methods has been distributed. Assistance has been given in the coop-

erative marketing of pulpwood as developed with groups of farmers in Virginia and North Carolina. The cooperative marketing of Christmas trees in New Hampshire has been a profitable venture for farmers. Encouraging of industries and schools to use wood as fuel has led to increased sales by farmers. Forward steps have been taken in Connecticut through a study of markets and the establishment of standard grades for firewood.

The production and sale of maple sugar and sirup products has been an important line of work in New Hampshire, Vermont, New York, Ohio, and other producing States. The adoption of standard grades of maple products and the use of proper labels have been urged by extension workers, and have been accepted by many producers.



FIGURE 36.—A timber-thinning demonstration on a farm in Virginia. The use of proper cutting methods to provide timber products for the farm and to maintain the productiveness of the woods is an important phase of farm forestry.

Thinning, Weeding, and Pruning

Improvement of farm woods through thinning, weeding, and pruning has been a project in 22 States. The economic aspects of this work have been emphasized. Assistance in woodland management has been given on approximately 9,000 farms, involving more than 898,000 acres of woodland. Many of the operations on these lands now serve as demonstrations in the community. The construction and repair of buildings with timber cut from farm woods have been reported by 1,042 farmers. Other work of similar type, such as saw filing and improvement of small sawmills, has been progressing in Pennsylvania and North Carolina.

The farm woods have been an aid in the conduct of relief activities such as supplying work and fuel. In one State a firewood relief project was organized. Approximately 25 towns followed plans for using farm woods to furnish labor and fuel for men on relief rolls. The program, which was started as an extension project, has been taken over by the State relief agency. In other regions assistance has been given in barter deals in which farmers traded corn for fence posts. In some sections firewood has been used as a medium of exchange.

Forest-Tree Planting

Forest-tree planting is the most widely accepted project in farm forestry and has been carried on to some extent in all of the 33 States and 2 Territories having extension foresters. During the past year approximately 22 million trees were distributed to farmers by the State forestry agencies. A large percentage of these trees were planted through the assistance of extension foresters and county agents. Planting demonstrations, general meetings, extension schools, circular letters, and bulletins have been used to spread information on forest-tree

planting and to give a clearer understanding of its problems.

The States of Pennsylvania and New York continue to lead all others in the number of trees planted on farms with approximately 4.500,000 trees being distributed in each State. In the Midwestern and Plains States the protection of farmsteads and crops from severe winds, dust storms, and "blow-outs" in fields, is an important prob-Interest has been maintained in these sections, but fewer trees have been planted because of reduced farm incomes. Nebraska has continued to lead other States in its territory with 3,231 farmers making windbreak plantings. The establishment of windbreaks for the protection of livestock and to provide cover for desirable wildlife is a new feature of the Nebraska program. Another type of work which has attracted interest is the establishment of windbreaks in California to protect citrus crops. Windbreaks as a factor in economical production are gaining in favor in that State. Puerto Rico stands out prominently with a record of 2,083,844 trees distributed to farmers for wood production, coffeetree shade, and establishment of windbreaks for grapefruit orchards. Other kinds of plantings that are gaining considerable headway are: Slash pine for turpentine and pulpwood production, now under way in Georgia; black locusts on gullied farm lands. now being planted quite extensively in Tennessee and several other States. The stock used by farmers for forest planting was for the most part supplied by State forestry departments. Rapid advancement in this work can be expected as the result of the emergency conservation program in erosion control which is now in progress in a number of the central Mississippi Basin States.

Interest in 4-H forestry has been maintained on a satisfactory level. During the year a total of 15,489 club members, or 11,553 boys and 3,936 girls, took part in such work as tree identification, woodland judging, tree planting, timber estimating, and woodland improvement.

Junior forestry camps for 4-H club members and leaders have been held in several States. Also short courses for 4-H members and others interested in forestry have been used to stimulate practical pursuits and leadership.

W. K. WILLIAMS, Extension Service.

ORESTS Vital to Social and Economic Welfare of Many Communities

The forests have played a vital role in the history and progress of the United States. The wealth, tradition, and spirit of many of our States are

largely grounded in their forest wealth.

One-third of the land area of the United States is forest or potential forest land. In the rehabilitation of much of this area and in the wise

management of all of it so that it may contribute its maximum value to the permanent support of industries and communities, lies the answer to some of our most pressing national problems. The forests are a renewable resource. Through wise management and use, which is the essence of sound forestry, they may be made a continuing source of wealth.

No more outstanding example of the vitally important relationship of the forest resource to the social economy of a State can be cited

than that of West Virginia.

Two hundred years ago West Virginia was 99 percent forest land. Except for a few rocky cliffs and old fields where the Indians had probably raised corn, and a few hundred acres of "glades" on top of the Alleghenys, the entire State was one vast unbroken forest, one of the finest stands of timber in the country. Abundant rainfall, good soil, and altitude made West Virginia a favored land for the growing of forests. The earliest settlers, who began to come into West Virginia about this time, were real woodsmen, who knew how to get their living from the wealth of the woods. Their descendants today have inherited those sturdy qualities that living in close association with the native forests have bred.

These early pioneers rapidly penetrated into all parts of the State. They made small clearings and occasional roads, their homes were hewn from the timbers of the forests, and their farms were carved out

of the dense woods.

By 1840, the geographical center of population of the United States was located at Canaan Mountain in what is now the Monongahela National Forest. In 1863, when West Virginia attained statehood, the great seal adopted by the State reflected its forest background. The design showed a farmer carrying a woodsman's ax, and on the reverse was shown a wooded mountain. This seal was prophetic of the great part the forests were to play in coming years in the rapid growth and upbuilding of the State.

Hardwood Surplus in West Virginia 40 Years Ago

Forty years ago at the World's Columbian Exposition in Chicago, West Virginia proudly assembled an exhibit of its forest wealth and claimed, with figures to prove it, that she had a greater amount of hardwood timber in her forests than any other State in the Union. Governor Wilson at the time enthusiastically declared: "I have the statistics to prove that West Virginia has more of a surplus of hardwoods than any other 10 States in the Union." A description of the State's forest resources prepared at that time said:

A thorough examination of the forests will show that nearly or quite one-half is still uncleared, and by far the greater portion of the uncleared land is still in virgin forests where the ax of man has never found its way and where the magnificent specimens of forest growth stand thickly side by side and reach a towering height which gives the forests of the State their splendid values. The splendid forests of thousands of acres of untouched timber, where nearly every kind of timber found in the North American Continent may be seen, where trees grow to such size that ordinary methods will not suffice to handle them, and where the forests are so thick that the light of day scarcely penetrates their shade, and pathways must be cut before the ax-man can find room to work, are yielding annually many million feet of timber which has gone to nearly every country on this earth and given the West Virginia timber a world-wide reputation. No

finer oak or poplar grows beneath the sun than that which may be found in any county in the State.

That was 40 years ago.

About that time the exploitation of West Virginia's forest wealth was getting into full swing. This same report also said:

Some 10 or 15 thousand men are now engaged in one way or another in timber, lumber, sawmills, or kindred business. Great armies of choppers have, with their axes, made inroads in the woods throughout the State, and every rise brings out of every stream, however small, its quota of logs or ties or other timbers. New sawmills are building every day, new territory being opened, and it is safe to say that now the total cut of all the mills is no less than 500 million feet a year.

And note what was happening.

But a short time is required to change a forest to a farm, to bare the mountain tops and clear their sides, to turn the timber into ties, or work them into lumber or its products. Unlike some other sources of national wealth, the quantity and quality of timber of our State depends on no contingency, and its value must increase.

Industries Based on Forest Wealth

As was said, that was written only 40 years ago. This was the period of tremendous development industrially and agriculturally, of expansion and of forest exploitation. Supported directly or indirectly by the forest wealth, industries sprang up and grew; forests and forest industries provided markets for farm products and outlets for farm labor, and agriculture expanded. In 1910 or thereabouts, when lumbering reached its peak in West Virginia, there were 1,524 sawmills in operation. The total lumber cut was more than 1½ billion feet. The population of West Virginia had increased from less than half a million in 1870 to 1,120,000 in 1910. The number of farms had increased from 39,000 to over 96,000. West Virginia ranked tenth among all the States in lumber production, and in hardwood production alone it was among the 3 or 4 leading States in the Union.

There was tremendous waste. Vast areas of the finest virgin timber in the East were logged off with the usual American prodigality. Fire ran rampant over the hills. Some of the choicest huge oak logs were cut and piled and burned to clear lands for farming; this land was in many cases poor farm land at best but ideal for timber growing. Fine logs were stripped for tanbark and left to rot on the ground. But the wealth of the woods was going into the building of a great State,

and things were booming.

Today the picture has changed. Only a remnant of the virgin forests remain. Some 8 million acres of cut-over woods are reported to be in need of protection and rehabilitation; some 4½ million acres have been classed as devastated. From 1,524 in 1910, the number of saw-mills in West Virginia declined to 338 in 1930. The total lumber cut dropped more than one-third; from 1,376,000,000 feet in 1910 to only 406,000,000 feet in 1930. A few years ago, one of the State's foresters reported 2,175 deserted lumber-camp sites. From 1909 to 1927, employment in the forest products using factories of the State fell off 21 percent. Farm land, as much as 100,000 acres in some years, has gone out of cultivation, much of it devastated by erosion. One of the State's leading lumbermen said a few years ago:

When we see our hillsides stripped of forests and turned into green fields, and then see the soil of the green fields washed down into the rivers, leaving the bare rocks, we cannot help a feeling of depression coming over us when we know that wealth has disappeared for all time.

Effects of Unwise Forest Exploitation

What does all this mean to the local community? In the Horton-Whitmer community in Randolph County, W. Va., forest exploitation began about 1894 when a lumber and pulp company started operations at Horton. When the mill was operating at capacity, on a double shift, its output was about 100,000 feet per day, and some 500 persons were employed in the mill, yard, railroad, and woods. In 1926, with the timber about gone, the company abandoned their operation. Another company carried on a few years longer, but everything was shut down by 1929.

A large number of families in that community were left without employment. Even now, 5 years later, most of these people have no occupation. There is some grazing, but only a small portion of the land is suitable for farming. And with no industry going on, there is little market for farm products. The one great natural resource of the region—the timber—is gone. There is no prospect of employment for a stranded population. Over 60 percent of the families are on relief.

To cite another example, Hendricks and Hamilton, in Tucker County, are in what not so many years ago was a district of virgin forest of fine cherry, poplar, walnut, spruce, and hemlock. From 1910 to 1920, the community had a population of some 4,000 permanent residents and several hundred transient workers; and several lumber companies, a handle factory, a tannery, 6 band mills, and 2 railroad yards were paying good wages and going strong. Today only one band mill is working and it has moved to another locality. The population has dropped to less than 200 families, and of these 135 families are on relief. The prospects for the immediate future are not bright. There is at present no industry nearby where they might be absorbed.

Even as early as 1911, a report to Governor Glasscock on the West Virginia geological survey showed declining forest-products industries in many counties. Kanawha County, it was said, was long a heavy lumber producing county, and Charleston, the State capital, ranked as the center of an enormous lumber industry. Millions of feet of logs and lumber and bark came down the Elk and Kanawha Rivers every year from the late seventies until about 1904. And then many of the

mills began to be dismantled and moved to other States.

Ceremony of the Last Log

On the eve of the first Mountain State Forest Festival, held in West Virginia in 1930, a significant ceremony occurred at Mill Creek. It was the ceremony of the last log. For 50 years, great logs had been going into the mill at Mill Creek. One last log was left in the mill pond. It was floated to the incline. It went up, and in 60 seconds it had become boards, slabs, and sawdust. And then the steam went down. The band saw stood still, never to start again. The ceremony typified the death knell of a once thriving industry.

Such cases are not peculiar to West Virginia. The story of forest exploitation, of the "cut-out-and-get-out" policy, has been enacted throughout the country. Many a community, north, south, east, and west, now looks to its barren hills with the hindsight that is better than

foresight and wishes it had used its forests more wisely.

But we need not despair of a remedy. The forest may be down but it is not necessarily out. With careful management, and adequate

protection, forest can be grown again. Further destruction by fires can be cut to a minimum by systematic and organized protection, backed by an enlightened public interest and support. The raw earth sores or gullies washed out on our hillsides by erosion can be healed by check dams and revegetation. The barren waste lands can be made productive once more by reforestation. And the remaining timber stands can be managed and harvested under a system which will make them permanently and continuously productive—a system which the foresters call sustained yield.

Notable Progress Already Made

West Virginia already is making notable progress in the protection and rehabilitation of her forest lands. The Monongahela Forest in West Virginia was in a way the starting point of the whole nationalforest system in the East. A series of floods, culminating in the Monongahela River flood of March 1907, which caused a loss of some \$100,000,000 in West Virginia and Pennsylvania, called the attention of Congress to the need of protecting this and other watersheds and led to the passing of the Weeks law for the purchase and forest administration of watershed areas in the East. Realization that public and private cooperation is needed over broad areas of forest to protect life and property and to assure continuity of economic and social values became widespread, and acquisition largely by purchase of more than 10,000,000 acres of land for national forests in the East followed. The Monongahela National Forest, with recent additions of 239,005 acres since June 9, 1934, under President Roosevelt's emergency forest purchase program, now has become one of the largest national forests east of the Mississippi. It has a gross area of 1,625,200 acres, of which 678,169 acres are already under Federal management.

The Monongahela National Forest protects part of the headwaters of four nationally important streams, the Monongahela, Potomac, Kanawha, and the James Rivers. In protecting these nationally important watersheds, the Monongahela Forest is performing a service extending far beyond its boundaries, a service felt throughout the Middle Atlantic States, through the Ohio and Mississippi Valleys, even

to the Gulf of Mexico.

Besides developing efficient fire control and facilities for planting and management for sustained-yield forest production as a continuing source of raw material for local industries, the Forest Service has built many roads and trails, and has developed camping facilities in the highlands, preserved game and wildlife resources, and in other ways taken important steps to make the Monongahela National Forest a permanent resource for the people. The forest contains many outstanding scenic attractions, which the new Forest Service roads are making accessible, bringing many tourists into the State.

One measure to bring the Monongahela National Forest back to productivity and greater watershed value and to reforest many thousand acres of denuded land has been the establishment of a forest nursery at Parsons. This is one of the largest Forest Service nurseries in the United States. The nursery now contains 10,000,000 seedlings of all ages. It is being developed to reach in 2 years an annual

production of 5,000,000 trees ready to plant.

Destination of Future Monetary Returns

Of the future monetary returns from this national forest, 25 percent will go directly to the counties in which it is located, for the support of county roads and schools. An additional 10 percent will be allocated each year for the building and upkeep of roads within the forest.

Including the 1,500 C. C. C. workers engaged on improvement work, the Monongahela National Forest in 1934 was able to give full-time

or part-time employment to more than 5,000 men.

As the new forest returns to the hillsides, new wood-using industries will return to the section, giving still more employment and support to the communities. And this employment will be stable and permanent, because the forests will be managed for sustained yield. The recreational and wildlife resources of the forest, husbanded by careful management, will bring other new business to the section.

Thus the Monongahela National Forest is contributing, and will contribute to a much larger extent in the future to the development of a permanent, sustained, and prosperous community life. Nearly 150 national forests, scattered throughout the United States, will simi-

larly contribute to local and national welfare.

The ceremony of the last log was symbolic of the end of an older era. The age of pioneering and exploitation is past—and it was a great age, but a short-sighted one. Locally and nationally, our need is now for restoration of our basic resources and for the establishment of conditions which will lead to a more normally developed American civilization—a civilization based upon permanence, upon stabilized communities and industries, upon planned and wise use of our resources and wealth. In this national program for social and economic reconstruction and rehabilitation, intelligent and planned use of our forest land must play an important part.

F. A. SILCOX, Forest Service.

RUIT Darkening The tendency of many fruits and vegetables to darken at freshly cut surfaces is well known. Slices of apple, for example, by the time they have been left in the air long enough to dry, are usually a deep brown. This is a serious loss to the fruit drier, because such dark-colored products are not received well on the market. It is impossible to prepare from them an article of food which even remotely resembles the original fruit in respect to

color.

Only one method has ever been applied which satisfactorily prevented this discoloration of the cut fruits while they were being dried. This consists of treating the freshly-cut fruit with sulphur dioxide (the gas evolved from burning sulphur). The fruit dried after sulphuring has a good color, but retains considerable amounts of the gas. Its export to foreign countries is restricted, since the food laws of many European nations do not permit food to be sold which contains more than a very small amount of sulphur dioxide.

Research was begun recently by the Bureau of Chemistry and Soils with the object of finding a satisfactory method of preventing the discoloration of the cut fruit (while it was kept or being dried) which

could replace the sulphuring process. The investigation started with a study of the enzyme reactions that caused the darkening of cut fruits. It was successful in producing these reactions in the test tube where they could be investigated very thoroughly. As a result it appeared that several classes of substances ought to possess the property of inhibiting the discoloration. Of these, the great majority were poisonous, but one class seems to be harmless, because it occurs in many foods. This is the class of sulphydryl-containing amino acids and peptides, typified by glutathione and cysteine.

Experiments with these substances were made on apples of a variety which darkens rapidly when cut (Paragon). The results showed that only very small amounts of these substances were necessary to

completely inhibit the darkening of the apples.

The application was simple; the sliced apples were sprayed with a very dilute solution (0.1 to 0.25 percent) of the chemical and then placed in a drier where they were handled as in an apple-drying plant.

In technology these chemicals are as yet rare, although if there were any great demand for them they could probably be made cheaply enough. The investigators knew, however, that a substance related to those with which they had experimented is often found in pineapple juice. The next step was therefore to spray the fruit with pineapple juice which contained this substance. The effect of the pineapple juice was weaker than that of the chemicals, but the result was quite satisfactory.

Fruit dried after spraying with pineapple juice is, of course, covered with a thin film of dry residue from the juice. This does not seem objectionable but it may be avoided by first fermenting the juice, removing the yeast and alcohol, and using the greatly purified liquid

in the spraying process.

Another application of this finding is that cut-up fruit, such as apples, apricots, bananas (if they are not too ripe), peaches and probably many others can be stored in the cold for as long as 24 hours without turning dark if they are immersed in pineapple juice or if a small amount of one of the chemicals mentioned is added to the juice which covers them. In the event that the pineapple juice is not already acid a little lemon juice should be added to it, since the darkening is more easily prevented in acid solutions.

A. K. Balls and W. S. Hale, Bureau of Chemistry and Soils.

UR Scarcity Through Overtrapping Impends; Conservation Needed Not long after Columbus landed on the western shores, the traffic in North American furs began. Since that time it has continued until the fur resources

of the country have been shamefully exploited. The persistence of any species in the presence of the almost overwhelming forces that tend toward its extermination is a striking natural phenomenon, and so far as the layman is concerned it completely conceals the decrease that is in reality taking place, creating the impression that there is no present or threatened danger of extreme shortage. It seems unreasonable to believe that the people of this country are not interested in perpetuating our valuable resources in fur animals, but very few seem to realize that the restoration and conservation of the fur

species are as much matters for their concern as is the preservation of game, forests, and other natural resources. And not all who recognize that the supply of American raw furs is in jeopardy have a clear

conception of the implications of the existing situation.

The total annual catch of fur animals in the United States was at one time conservatively valued at \$65,000,000, which was greater than Canada's \$18,000,000 and Soviet Russia's \$35,000,000 catch combined. There are various reasons for the United States appearing as so large a The great Mississippi River Basin is, as it always has been. an ideal section for wildlife, with ample cover, unfailing water supply, and plenty of food. Skunks, muskrats, and many other fur animals are found there in extremely large numbers. Although for several generations trapping has been carried on throughout the entire Mississippi Basin, in some parts of it for three centuries, the smaller fur animals in some parts have done well, chiefly because of their fecundity but also because their larger natural enemies have been, for the most part, exterminated in the region. Another reason for the great annual catch of American furs has been that there are more trappers here than in many other countries. The population of the United States is greater per square mile than that of Canada or Siberia, and the trappers are well equipped for their work in woods and waters.

Fur Decrease Causing Apprehension

Many years ago a decrease in the fur supply was indicated by the smaller relative numbers of the more valuable pelts reaching the markets, including marten, fisher, mink, and beaver. Now, the decline in the quantity of fur pelts of all kinds is causing uneasiness and apprehension among fur merchants throughout the United States and Canada. Twenty years ago the periodic decreases might have been attributed to destruction of forests by ax and fire, indiscriminate drainage of swamp land, and encroachment of civilization. The isolation that once afforded protection to many fur animals has been ended by the recent development of the automobile and airplane. The constant decline during the past decade, however, is directly attributable to overtrapping and to the staging of so-called "vermin" campaigns for destroying fur animals that obtain part of their food from birds classed as game. Another factor not without significance is the indifferent attitude of many State game commissions toward the protection of fur animals.

It is clear that the present system of fur-animal conservation has not proved effective. The responsibility of conserving and protecting the various fur species rests chiefly with the States, but the problem is national in scope, and the seriousness of the situation calls for a coordinated Federal policy based on scientific findings. There is hope—through cooperative effort of Federal and State agencies, the fur trade, and the general public—that at least a part of this wasted heritage will be restored, thereby assuring a continuing natural supply of fur animals, with permanent occupation for trappers and for those engaged in manufacture and the many ramifications of the fur trade.

Need for Protection of Breeding Stock

There can be little doubt that when the fur business regains its normal status in American industry it will face a marked shrinkage in the supply of American raw furs. There would follow, if experience means

anything, a price increase that would send every farm boy to the village for more and more traps. And then there might ensue a period not merely of scarcity but of actual lack. It was so with the buffalo; it was so with the passenger pigeon; it will be so with certain fur species—unless the fur trade itself takes a hand in protecting the breeding stock, and unless coordinated efforts. Federal and State, are made for conservation.

Frank G. Ashbrook. Bureau of Biological Survey.

Emphasized by Agricultural Adjustment

AME as a Farm Crop The reduction of planted areas in the United States has emphasized anew the possibilities of game as a farm crop. Millions of acres of submarginal land

have been retired from production, and replacement crops are being sought for the areas that formerly contributed to farmers' surpluses. Game management under these conditions offers itself as an opportune

side line to general agriculture.

The sale of hunting privileges has proved practicable in various parts of the United States. In Texas landowners licensed to sell shooting rights have charged as much as \$4 a day, or 25 cents an acre under leases; and in Ohio 28 farmers on an 11,000-acre area under central management realized a revenue of \$500 during the fall of 1931 by issuing 200 hunting permits. Similar practices have been followed in other States, and the farmers have realized additional profits by providing hunters with meals, lodging, and various services.

The prospects for encouraging the increase of wildlife—for profit as well as for general enjoyment—have thus seemed so important that the Bureau of Biological Survey has prepared Farmers' Bulletin 1719, Improving the Farm Environment for Wildlife, and has mimeographed recommendations on planting for wildlife in the Corn Belt and in the Cotton Belt. It has also prepared exhibit material for use at agricul-

tural expositions and sportsmen's shows.

Two factors in increasing the abundance of wildlife, the Bureau has pointed out in its publications, are of essential importance—cover and Both require special consideration by the farmer who wishes to develop the wildlife on his premises. Food, of course, is indispensable.

but cover must receive first attention.

Wildlife cannot persist on land without adequate shelter from enemies and protection for nesting. For the majority of the small forms of wildlife, cover means low, dense vegetation, some of which should be tangled, or stiff and thorny, so that in time of need the pursued can dive into it to escape the pursuer. Weedy fields, for instance, provide fairly good concealing cover, but they are much improved for wildlife by the presence of rose or berry patches, plum thickets, or honeysuckle tangles.

Uses of Planting to Improve Cover

Planting to improve cover can well be made to serve a double purpose by using food-producing vegetation, and a triple use by carrying it on where erosion control is needed. Greenbriers or catbriers, blackberries, dewberries, grapevines, Virginia creeper, and Japanese honeysuckle—to mention a few examples—have a threefold usefulness—as soil binders, as food producers, and as cover. Choice of plants will, of course, depend on their suitability for particular regions.

The increase of game cannot be achieved without the expenditure of effort on the part of the farmer, but the efforts are more than amply repaid, and the necessary information on methods can readily be obtained from the Bureau of Biological Survey or other agencies. Game management also creates conditions that attract other desirable forms of wildlife, beautify the farm, and add to the pleasures that come from the presence of birds and other living things. Besides adding a few dollars to the income and utilizing areas retired because of the necessities of agricultural adjustment, game management thus provides for an enrichment of farm life.

H. P. SHELDON, Bureau of Biological Survey.

GAME Management and Forest Protection Are Related Tasks Many professional foresters, formerly concerned almost exclusively with timber production, now realize that game and fur bearers are also valuable prod-

ucts of forest lands and that the forest fauna constitutes an important national resource. This realization is an important development in the history of wildlife in the United States. At the time of the discovery of North America, large and small game in abundance ranged throughout the length and breadth of the continent, but with the clearing of forests for farms and the occupation of grasslands for agriculture or grazing, the animals disappeared or resorted to the fast-diminishing forests that remained.

As the land was cleared for cultivation in the East, the logging process, taking about all of the merchantable timber, extended successively from area to area nearly throughout the region. The removal of the forest canopy, however, has resulted in a growth of small trees, berry-producing shrubs, and other vegetation that affords tender browse within easy reach of deer, fruit for bears and other wildlife, and sustenance for rabbits and wild turkeys. The forest setting has thus been prepared for the restoration of these species on a scale far exceeding such game populations in the same areas in former times.

In Western States most of the game of the open country has disappeared or has taken refuge in the national forests or national parks. Elk and mule deer, for instance, forced down by winter snows in the higher mountains along the backbone of the continent, formerly migrated far out to the surrounding plains, where the snow was light and feed abundant. The winter ranges they once knew, however, are now utilized as farms or for the grazing of domestic stock, and the game must remain at the higher elevations, exposed to the dangers of cold and starvation. Thus wildlife developments throughout the country have emphasized the importance of the remaining forest areas.

Regulation of Game Abundance

Experience has shown how readily game can be restored where food is abundant, and where killing by man or by predatory animals is effectively controlled; it has also demonstrated the vital importance of checking numbers in time to prevent the destruction of forage. The regulation of game abundance, therefore, becomes an important part of the routine of forest management. Definite plans must be based on

field studies of numbers and game range-carrying capacity, with due consideration for any domestic stock or agricultural or other possibly conflicting interests. Such game management means that the seasons for hunting, the bag limits, and the sex ratio should be fixed each year in accordance with local conditions. It also means that hunting licenses must be limited to unit areas, instead of being applicable for use almost anywhere in a particular State. Such control of licenses is imperative if the depletion of game is to be prevented in one unit area while a mounting surplus is left unchecked in another. Similar principles should be applied in the taking of fur animals, which are likely to be reduced to the verge of extermination.

Owing to varying and often complicated conditions, game management brings into prominence many local forestry problems. The suitability or carrying capacity of a forested area for game depends largely upon the stage of forest succession, and as younger timber stands contain far more small growth available as forage than do those approaching maturity, logging or thinning operations as carried on by the Civilian Conservation Corps under competent direction are

usually beneficial for wildlife.

Effects of Overbrowsing

Deer especially, but elk, antelope, moose, and other animals, under what may be regarded as normal conditions, are dainty feeders, nibbling the leaves and tender shoots of plants of many kinds, taking a little food here and a little there. The cropped branches are rapidly renewed, and there is little or no harm to the general vegetation. some plants, more palatable than others, are gradually killed through These animals overbrowsing by an excessive number of animals. must then resort to the less palatable plants, and the progressive destruction of foliage, often becoming apparent at first only in spots, may extend to the entire forest. Overbrowsing by game animals is often undetected by the ordinary observer until a line marking their highest reach is clearly evident. Wherever such a line is seen, it is an indication that a serious situation has already been allowed to develop. The repeatedly defoliated plant stems cease to put out leaves, and if their tops can be reached the trees or shrubs are killed or dwarfed in If this process is continued, the inevitable result is starvation for the game, and this is usually accompanied by serious damage to forest reproduction. Even such small game as the various kinds of hares, rabbits, and squirrels may assume considerable importance, as these animals, especially the snowshoe hares, are subject to cyclic fluctuations, and where overabundant may become injurious to forest reproduction.

A striking illustration of the importance to both the game and the forest of disposing of surplus animals when the forage-producing capacity of a game range is threatened is afforded in the rise and fall of the mule deer of the Kaibab Plateau, in northern Arizona. This area was maintained as a refuge on which the number of deer mounted rapidly to a peak, resulting in serious injury to forest reproduction, permanent impairment of the forage supply, and disaster to the deer

through starvation.

Forest Reproduction Sometimes Threatened

In other parts of Arizona the overproduction of game has led to surpluses that threaten the forage supply and seriously injure forest re-White-tailed deer in the Santa Catalina Mountains have greatly increased in recent years, and forest damage is resulting. reintroduced on the Sitgreaves National Forest have become too numerous and destructive. Even the antelope, reduced in Arizona a few vears ago to a point where extermination was imminent, have increased to thousands in the Coconino National Forest and adjoining territory. The competition of domestic stock with the game animals has so reduced the normal forage supply that the antelope are forced to browse on junipers and other trees as high as they can reach, leaving them completely defoliated to a sharp line such as is seen on overutilized deer ranges. On areas closed to hunting, the mounting numbers of the antelope, like those of the deer, have been coincident with the control of predatory animals, mainly covotes, instituted primarily in the interest of domestic stock production.

The deductions to be drawn from these, and from cases that might be mentioned in other States, east and west, should have a wide application in similar forested areas. The conservation of forest game and fur-bearing animals involves principles of wildlife management and adjustment that are comparatively simple, but a well-informed public is necessary if the inertia and prejudice that tend to paralyze constructive effort are to be overcome. Both wildlife and timber are major forest resources, to be fostered in proper relation to each other.

E. A. Goldman, Bureau of Biological Survey.

RAIN Standards, Revised and New, Promulgated for the 1934 Marketing

Revised standards for wheat, corn, barley, oats, Feed Oats, Mixed Feed Oats, rye, and grain sorghums were promulgated by the Department on

March 31, 1934, as the result of a 4-year study of grain-marketing practices and of the use and application of the various United States standards for grain. New standards for flaxseed, Mixed Grain, and malting barley produced east of the Rocky Mountains also were promulgated. These revised and new grain standards were made effective under the Grain Standards Act of 1916, for the marketing of the 1934 grain crops.

Objectives Sought in Making Revisions

The Department's investigations showed that many changes in grain production, handling, marketing, and processing practices have taken place in the grain industry since the original United States grain standards were promulgated. The revised and new standards are designed (1) to modernize the standards so that they will conform, as closely as is practicable, with present-day grain production, handling, and market practices, and with users' requirements, (2) to establish certain new classes and grades representative of users' requirements, thereby to promote definite market quotations according to quality, (3) to effect certain improvements in the requirements of the so-called "contract grades" so as to raise the level of quality represented by the

grades No. 2 and No. 3, thus to make deliveries under futures and other contracts more acceptable to grain users, (4) to impose restrictions on objectionable and uneconomic mixing, such as the mixing of durum wheat and damaged "other grains" in the so-called bread wheats, and (5) to extablish new standards for malting barley produced east of the Rocky Mountains, flaxseed, and mixed grain for the use and benefit of the grain industry as a whole.

Moisture Factor in Wheat Standards

In the official wheat standards that were in effect prior to July 2, 1934, moisture content was one of several factors for the determination of numerical grade. In hard red winter wheat, for example, grade No. 1 permitted a maximum moisture content of 13.5 percent; grade No. 2, 14 percent; grade No. 3, 14.5 percent; each of the grades No. 4 and No. 5, 15.5 percent; and any wheat containing more than 15.5 percent moisture was included in Sample grade. A car lot of hard red winter wheat, for example, which met the requirements of grade No. 1 according to the factors of test weight per bushel, damaged kernels, foreign material, etc., but which contained 15 percent moisture, was graded No. 4.

Many grain producers and shippers believed that such wheat was unjustly graded and sometimes unjustly discounted in price, under the standards in effect prior to July 2, 1934, because moisture content should not be considered as a factor of permanent intrinsic quality comparable in importance with such factors of quality as test weight, damaged kernels, etc., for the determination of numerical grade. Although moisture content is a measure of the hazards in transporting and storing wheat, it can be easily modified through mixing and drying

operations.

The revised standards provide a new method for the grading of wheat according to moisture content. A maximum moisture content of 14 percent is permitted, for example, in each of the 5 numerical grades in the revised standards for hard red winter wheat. If a lot of hard red winter wheat contains more than 14 percent but not more than 15.5 percent moisture, it is assigned the numerical grade to which it is entitled according to all the grading factors except moisture, and the word "Tough" is added to the grade designation. The word "Tough" indicates that such a lot of wheat contains more moisture than is permitted in the straight unqualified numerical grades. Thus, hard red winter wheat that contains 15 percent moisture, for example, but that otherwise meets the requirements of grade No. 1 and of the premium subclass Dark Hard is graded No. 1 Dark Hard Winter, Tough, whereas wheat of the same kind and quality would have been graded No. 4 Dark Hard Winter under the old standards. Similar methods, but with different moisture limits in some cases for the special grade Tough, were adopted also for the other classes of wheat, and for rye, barley, oats, Feed Oats, Mixed Feed Oats, and Mixed Grain.

Although the price of grain is not determined by grades alone, the grades indicate qualities that command premiums or bring discounts. In the matter of moisture content the new grade No. 1 Dark Hard Winter, Tough, for example, describes the milling and storage qualities of wheat containing excess moisture but otherwise of No. 1 quality much better than did the old grades of No. 3 Dark Hard Winter or No. 4 Dark Hard Winter. These changes in the method of grading

should prove of use to grain producers and country shippers in emphasizing the utility values of such wheat.

Restrictions on Objectionable Mixing

Experience in the use of the old grain standards showed that certain objectionable mixing practices prevailed under these standards. An outstanding example of mixing that served no useful purpose for either producers or millers, and that caused objections from foreign buyers of American wheat, was the mixing of durum wheats into hard red winter wheat within the maximum limitation of 5 percent that was permitted in grade No. 2 of the old standards. On numerous occasions when the price of durum wheat was materially lower than the price of hard red winter wheat, there was extensive mixing of this character in wheat of the commercially important grade No. 2 Hard Winter, whether for export or domestic delivery.

A study of wheat receipts in the important grain markets showed that less than 0.5 percent of the market receipts of hard red winter wheat of country origin contained natural admixtures of durum wheat in quantities greater than 2 percent, and that such mixtures were found in only a few counties in the entire hard red winter wheat producing area. These data showed plainly that the maximum limitations for "wheats of other classes" in the old standards for hard red winter wheat were greater than necessary to take care of natural admixtures, and served often as an official tolerance of objectionable mixing.

The revised standards lower the percentages of durum wheat permissible in grades Nos. 1, 2, and 3, of the bread-wheat classes, thus restricting objectionable mixing and improving the milling quality of these grades of wheat. Curtailment of this objectionable mixing practice should benefit the entire wheat industry. The mixing of durum wheats into the bread wheats, as done under the former United States wheat standards, was of no benefit whatsoever to producers, and at times was injurious to their interests, because it lowered the quality of large lots of elevator wheat below the level commonly found in country-run wheat of the same grade. The hazard of depreciated quality, therefore, was inherent always in elevator deliveries of wheat of the important contract grade No. 2 Hard Winter, for example, and under such conditions the tendency was to depress the futures price for wheat of that grade. This reacted unfavorably on the cash prices paid to farmers for country marketings of wheat, because the futures price unquestionably exerts an important influence on cash prices.

New Grades for Oats of High Test Weight

In the purchase of oats from producers at country points, it nas not been customary to pay higher prices for oats of high weights per bushel than for oats of relatively low weights per bushel, although oats having high test weight are of relatively superior value. The old standards provided no grades for oats of high test weight. Thus, oats having high test weight per bushel were included in the same grades with oats having a relatively lower test weight per bushel, and no definite current market quotations by grade for oats of high test weight per bushel were issued at the terminal markets.

A study of the market receipts of oats during the past decade showed that a material volume of market oats tested more than the 32 pounds per bushel required for grade No. 1. The Department believes that the large part of the oat crop that is of superior value according to the important factor of test weight per bushel should have definite recognition in grain inspection and marketing. Thus, the revised standards for oats provide special grades for Heavy and Extra Heavy oats. These special grades, when applicable, are made a part of the complete grade designation, as for example: No. 2 Extra Heavy White Oats, thus emphasizing by grade the superior value of such oats as compared with other lots of white oats that meet the requirements of grade No. 2 but that do not possess the premium quality of high test weight per bushel, and which, therefore, are graded and designated merely as No. 2 White Oats.

New Standards for Malting Barley

The use of barley for malting purposes has increased materially in the United States because of the increased consumption of malt beverages and the manufacture of malt products used in malted milk, bread making, and candy making. No United States grades for barley of malting type had been established heretofore. Barley of the important commercial grade Special No. 2 Barley under the old barley standards was often entirely unacceptable for malting purposes because barley within that grade might include objectionable types of barley for malting purposes, might be of nonuniform kernel size, or might be nonmellow in character.

Barley of malting type has been sold almost entirely by sample in accordance with buyers' fancy only, and regular and definite market quotations for malting barley by grade have not been possible. At country points the barley crop usually was just "barley' so far as the producer was concerned, and in the absence of definite grades for malting barley, country buyers found it difficult to correlate country prices for barley of malting type with terminal market prices for

barley of this type.

The Bureau of Agricultural Economics made a thorough study of those physical characteristics of barley that are indexes of malting quality and that lend themselves to practical application in inspection procedure, and as a result of this study new standards for malting barley produced east of the Rocky Mountains were promulgated and made effective July 2, 1934. When these standards become fully incorporated into futures trading and other grain-market practices, they should serve as a useful base for current market quotations on malting barley by grade. This market service will provide producers and country shippers with more definite information than heretofore available on malster requirements and on prevailing terminal market prices for barley of malting type.

The Farmer's Interest in Grades

Although the examples of grain standards revisions and of new grain standards given in this article comprise only a partial illustration and explanation of the revised and new grain standards that were made effective in 1934, they should serve to illustrate the fact that the Department is seeking constantly to harmonize the standards with market practices, to increase the usefulness of the standards as measures of quality in commercial transactions, and to effect improve-

ments in market practices through the use of equitable standards that

will reflect benefits to grain producers and shippers.

Sound practical grain standards based on research and experience are of vital importance to farmers. Although market prices for grain are governed in general by the size of the grain supply and by the demand of domestic and foreign users of grain, the grain standards, nevertheless, have an important bearing on the distribution of the total market value of the grain crops among the various groups that produce, handle, store, and process these crops. The grain grades also have an important bearing on market premiums and discounts for grain of varying quality, as well as on the reflection of such premiums and discounts to the producers and country shippers of grain.

It is of importance to grain growers that the grades should represent the requirements of grain users to the fullest extent commensurate with the practical conditions of grain inspection. When grades are descriptive of and correlate with the requirements of users, wide-spread trading by grade rather than by sample is facilitated. This is of importance to farmers because, under such conditions, current and definite market quotations by grade are possible and keep producers and country shippers well advised at all times of market requirements and prices. Under such conditions, prices and trading practices at country points tend to follow the true course of the supply and demand situation at the terminal markets much better than when trading is done by sample only. It is also important that the grades correspond reasonably with production conditions so that an important commercial volume of grain may be comprised within each of the important commercial grades.

These principles have been adhered to by the Department in its grain standardization work and in meeting its responsibilities under the Grain Standards Act. The Department believes, therefore, that the revised and new grain standards of 1934 mark another forward step in the usefulness of grain standards and in the improvement of

grain-marketing practices.

Edward C. Parker, Bureau of Agricultural Economics.

RASSHOPPER Control
Accomplished Under
Cooperative Program

Farmers, business men, bankers, the public in general, and not a few scientists, heretofore skeptical of man's ability to combat the grasshopper

ability to combat the grasshopper menace, have had their doubts dispelled by the highly successful control campaign conducted in 1934 by the Department of Agriculture in cooperation with 18 of the Western States. In addition to demonstrating that crops could be saved from destruction by grasshoppers, it was also proved that probable grasshopper abundance could be predicted months in advance of their hatching and that very close estimates could be made of the quantity of poisoned bait needed for control. This marks a decided advance over former methods of planning and initiating control measures after the grasshoppers had hatched and started to injure crops. Such delayed action usually resulted in severe crop damage before control measures could be applied, frenzied attempts to obtain bait materials, and a poorly organized campaign which was only partially effective.

Beginning in 1930 and continuing through 1933, grasshoppers, benefiting by favorable weather conditions, steadily increased over the Great Plains States. During this period sporadic attempts at control were made by individuals and counties, and in 1932 an effective campaign was conducted in Minnesota, where the State appropriated \$250,000 for control operations; but no unified effort was made for control over the entire region, and as a result each year showed a larger area infested and greater crop losses.

Starting in 1931, the Bureau of Entomology in cooperation with State entomological agencies conducted fall surveys which have proved remarkably accurate in predicting grasshopper abundance the following spring. The results of the 1933 survey indicated that the worst grasshopper outbreak in the history of American agriculture could be expected in 1934, and that 15 million acres would need poisoning if

crops were to be saved.

The President transmitted to Congress an estimate of appropriation for the Department of Agriculture amounting to \$2,354,893 for cooperative control of an anticipated outbreak. Congress passed the appropriation bill carrying this item, and the money was made available on March 29, 1934. The Department established a grasshopper-control office at Minneapolis, Minn., let contracts for bait materials and bait mixing, and started shipping prepared bait to the States in less than 3 weeks after the money became available.

State Action Undertaken

Each State desiring Federal aid in grasshopper control organized a State control committee, appointed a State leader, and prepared a petition to the Secretary of Agriculture stating its need for aid and the cooperation the State was prepared to give in conducting the campaign, and giving an estimate of the quantity of bait required. State leaders called conferences of county agents, who returned to their counties to conduct meetings in every community and township where grasshoppers were expected in injurious numbers. Thousands of such meetings were held, and as a result of this educational campaign farmers in the most heavily infested States were fully instructed in control operations.

The grasshoppers hatched from 3 weeks to a month earlier than usual owing to a remarkably mild winter and spring in the Great Plains. Hatching began late in April and early in May and was far enough advanced by May 10 for poisoning operations to be started in some States. Grasshoppers not only hatched in predicted numbers in the 8 States that were surveyed in the fall of 1933, but also appeared in destructive numbers in other Western States, and by June Government

poisoned bait was being shipped to 18 States.

Nearly all the grasshopper bait furnished by the Government was mixed dry in mills and shipped in cars to the county where it was to be used. Approximately 10 gallons of water was added to each 100 pounds of dry bait before it was scattered. A total of 78,370 tons (3,900 carloads) of bait was furnished by the Government to the following States: Arizona, California, Colorado, Idaho, Iowa, Kansas, Michigan, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Wisconsin, and Wyoming.

From the beginning excellent kills were obtained with this bait. In most areas cultivated crops were the only source of green food, because of the drought, and grasshoppers hatching around the edges of crop fields invaded them within a few hours after emerging. Since crops lacked moisture for rapid growth, they did not have sufficient vegetation to delay the invasions. As a result the young grasshoppers advanced into the fields several rods each day. Hatching continued on warm days over a period of several weeks, with new hordes invading crops after each hatch. Under such conditions control could be obtained only by repeated applications of bait around the field margins and for several rods into the fields.

Campaign Generally Effective

In spite of these difficulties, crop losses were held to a minimum and there was no sign of letting up until early in July. By that time it became apparent over much of the area that the severe drought had injured crops to the extent that few of them would be worth harvesting. With no crops to save, some farmers gave up, but even then the majority showed surprising determination and continued the campaign in order to prevent an outbreak the following year. In all areas where crops were worth harvesting, the campaign was remarkably effective. Notwithstanding adverse conditions for poisoning and the presence of more grasshoppers than in any previous outbreak, these insects

caused no serious crop losses in any of the States.

Throughout north-central Montana, which suffered extensive losses from grasshoppers in 1933 and which was the most heavily infested area in the Great Plains in the spring of 1934, weather conditions were favorable, and the best grain crop in years was produced with only slight injury from grasshoppers. Farmers in this area generally agree that it would have been entirely devastated by grasshoppers if control measures had not been employed. Good crops were also grown in the Red River Valley in North Dakota and Minnesota, where lack of control measures would have resulted in total destruction of crops on hundreds of farms. No accurate estimate of the value of crops saved from destruction by grasshoppers in 1934 can be made, but control leaders from 18 States in conference at Denver, Colo., at the close of the campaign stated that it would exceed \$50,000,000. If drought conditions had not destroyed crops after they had been saved from grasshoppers, the saving would have been several times this figure.

The success of the campaign is due largely to the spirit of cooperation and whole-hearted enthusiasm for the work displayed by all persons and organizations connected with it. Railroads granted reduced rates and other concessions which enabled the Government to save several hundred thousand dollars, which was used in the purchase of materials instead of in freight payments. The agricultural departments of many of the railroads furnished men with experience in grasshopper control to aid the State extension services in educational work. Elevator companies provided free storage of bait at numerous rural points, and bran producers frequently sold to the Government when their

regular trade was demanding more than could be supplied.

As a result of the 1934 campaign, crop losses from grasshoppers for the current year have been largely prevented, and grasshopper populations have been reduced to the lowest point of the last 4 years.

J. R. Parker, Bureau of Entomology and Plant Quarantine.

AMS Stored in Tight Cloth Bags Keep Well for Use in Farm Home Wrapping smoked hams in parchment paper and then storing them in flyproof muslin bags proved to be the most desirable method when hams are

to be kept for several months at ordinary air temperatures, according to the results of a 3-year test just completed at the Animal Husbandry Experiment Station, Beltsville, Md. The method prevented infestation from skippers and excluded part of the air and light that hasten development of rancidity in the fat. Most farmers who butcher hogs during cold weather for their year's supply of meat are faced with the problem of keeping the meat sound and palatable through the summer without the use of refrigeration. As a result, farm-stored hams often deteriorate in quality or are lost entirely through infestation of insects.

The general quality of these wrapped and bagged hams (fig. 37) was not consistently different from those that had been hung up unwrapped and unbagged nor from those that had been shaded with black cloth, or bagged and painted with various protecting preparations such as lime or yellow wash. There was some difference in shrinkage in stor-



Figure 37.—Method of wrapping a smoked ham in parchment paper (right) preparatory to bagging. The ham shown at left has been bagged and painted with yellow wash to prevent infestation by skippers.

age and in the results from the cooking tests conducted with some of the hams, but the differences were not material except for the damage caused by skippers in the unwrapped hams.

Skippers got into the storeroom in spite of all precautions and infested the hams, a fact which demon-

strated the advantage of protecting the individual hams even though the storeroom was supposedly flyproof.

Results of Various Methods of Storing

Some of the 210 hams used in the investigations were coated with a mixture of pepper and molasses. These coated hams possessed a flavor after aging that was considered to be sweeter and slightly more pungent than the others. There was, however, some loss caused by skippers; except for that fact this method would be a highly satisfactory one for those persons who like the flavor of pepper.

Other hams were buried in crushed rock salt, in wood ashes, and in oats. All these lots were musty in flavor and undesirable. The meat buried in crushed rock salt absorbed too much salt during storage and the lean portion became undesirably dry and tough. Storing smoked meat in wood ashes, salt, or oats is apparently not satisfactory in a climate as humid as that of Washington, D. C., and vicinity.

Hams hung unwrapped in a dark, imperfectly ventilated homemade meat-curing box, such as is frequently used for curing meat in the South, aged as satisfactorily as those hung in the open storeroom. No skippers gained entrance to this box, though that danger was always present when the lid was raised for an examination of the meat. Hams made airtight by the use of heavy coatings of paraffin or stored in rubber bags all spoiled. Most of this spoilage was on the

surface, but the meat was considered unfit for use.

Mold developed on all the hams regardless of the method of storage. During damp weather the growth was extensive and during dry periods much of it disappeared. The least mold was found on the unprotected hams hung in an open window where the air circulation was greatest. Mold did not damage the flavor of any of the hams except those that were buried in ashes, salt, or oats. In those cases a musty, moldy flavor permeated the entire cut.

All the hams used in these tests were from carcasses that had been chilled promptly after slaughter. The cold, trimmed, fresh hams were dry cured with a curing mixture of 8 pounds of salt, 2 pounds of brown sugar, and 4 ounces of saltpeter for each 100 pounds of meat. The meat was cured at a temperature of about 38° F. and 3 days' curing time was allowed for each pound of weight of the average ham. The cured hams were washed and smoked for 3 days at a temperature that did not exceed 110°. No smoked meat was wrapped or packed until it had cooled to air temperature after removal from the smokehouse.

The mean monthly temperature of the storeroom in which the smoked meat was kept ranged between 46° F. in February to 78° in July and August; the mean humidity ranged between 36 and

95 percent.

R. L. Hiner, Bureau of Animal Industry.

OGS of Danish Origin Imported for Breeding Studies in This Country

Science is constantly exploring new opportunities of aiding the producer of agricultural commodities to conduct his business more efficiently

and to meet the needs of a changing economy. In this connection animal and plant breeders are putting forth their efforts toward making available new types and strains or varieties that are superior in important characteristics. These efforts have included importations and subsequent studies with respect to adaptability, merit in comparison with present varieties and strains, breed improvement, and possible advantages from crossbreeding.

Value of Production Records

For a number of years the Department of Agriculture has recognized the advantages of selecting breeding animals of the meat-producing species on the basis of performance records. It was with the needs of the industry in mind, especially for a more effective method of selecting breeding stock, that the Department together with the Iowa Agricultural Experiment Station, recently became interested in study-

ing Danish hogs and methods under American conditions.

Since the beginning of the present century the swine industry of Denmark has shown remarkable development. That country has shown the world the striking improvement that can be accomplished by well-planned, systematic testing methods, associated with good feeding and management. Denmark's valuable background of performance records in both economy of production and quality of product caused the Department and the Iowa station to obtain a number of Danish pigs, carefully selected, for such research purposes.

The most important influence in the development of the swine industry in Denmark has been the selection of breeding animals based on detailed breeding-center, testing-station, and bacon-factory records. This method of selection, supported by good methods of feeding and management, has resulted in the very efficient production of high-quality bacon of the type known commercially as Wiltshire sides.

The breeds through which this has been accomplished in Denmark are the Landrace and Yorkshire, with the former of much the greater importance. This breed originally consisted of 15 different families, the progeny of which have been studied through the years and only the more efficient ones maintained. Today, on this basis of actual performance, only 4 of the original families are regarded as of particular importance, 2 of these, the B family and the F family, meeting with most favor.

Landrace and Yorkshire Pigs Selected

Early in 1934 a swine specialist of the Department, representing also the Iowa station, selected in Denmark 8 boars and 16 gilts of

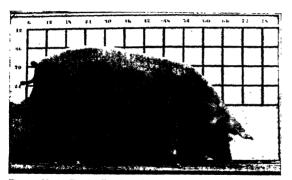


FIGURE 38.—A Danish Landrace boar, 12 months old, included in the recent importation. This boar is a grandson of Stendys Mariendal, a line of breeding highly regarded in Denmark.

the Landrace breed (figs. 38 and 39) and 2 boars and 4 gilts of the Yorkshire breed. Six of the Landrace pigs, 2 boars and 4 gilts, were from the Stabil line of breeding, Stabil being a highly regarded boar of the B family. Another group, 2 boars and 4 gilts, was from the most popular line (Stendys Mariendal) of the F family. The remaining 12 Land-

race pigs were selected to represent varied lines of good breeding. The Yorkshire pigs likewise represented some of the best breeding

in the country.

The 30 pigs were assembled at Copenhagen and shipped to St. Croix, Virgin Islands, where they were held in quarantine to comply with the livestock sanitary laws of the United States. The importation was made into the United States in May 1934. After a further quarantine period of 7 days the pigs were shipped to the United States Animal Husbandry Experiment Station, Beltsville, Md., and 6 of the Landrace pigs, 2 boars, and 4 gilts, were sent on from there to the Iowa station at Ames.

Each of the pigs in the importation has a known background of prolificacy, feed-lot efficiency, and quality of product. In the investigations with these pigs, now in progress, one of the first considerations is whether the Danish lines of breeding will produce results in this country, comparable with the records under Danish conditions. In addition the studies outlined provide for comparisons with representative lines of breeding in leading breeds commonly raised in the United

States. A further phase of the program is the study of certain modifications of the Danish testing methods to determine their value for use in swine-improvement work in this country. Crossbreeding with one or more leading domestic breeds constitutes another important phase of the program. This will be done to determine the possibilities of combining the better characteristics of the foreign and domestic breeds, as they may be found

to occur.

The importation was made with no thought of minimizing the merits of the American hog, but to compare these merits with those of selected strains of known efficiency from Denmark and also to combine superior qualities through crossbreed-ing. In view of the nature and scope of this study a number of years will be required to carry it to

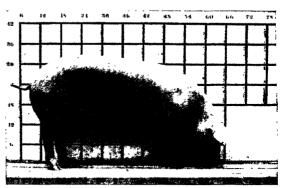


FIGURE 39.—A Danish Landrace gilt. 11 months old, in the recent importation by the Department and the Iowa Agricultural Experiment Station. The length and smoothness of side and development of ham are especially noteworthy.

completion, although it is likely that it will yield interesting and helpful results in the near future.

O. G. HANKINS and J. H. ZELLER, Bureau of Animal Industry.

ORSE Disease, Known as Encephalomyelitis, Yielding to Research

A disease of horses and mules manifested by nervous symptoms has existed in various sections of the United States for many decades. The affec-

tion has been called cerebrospinal meningitis, forage poisoning, blind staggers, sleeping sickness, brain fever, Kansas-Nebraska horse plague, and other names.

Contrary to former beliefs that the disease resulted from spoiled feed and a variety of other causes, research by California investigators showed in 1930 that a specific virus is responsible. At that time it was proposed that the disease be called encephalomyelitis, signifying inflammation of the brain and the spinal cord, which is the actual condition.

Since 1930 the causative virus has been found to exist, in the West, in California, Nevada, Utah, and South Dakota, and in the East, in Virginia, Maryland, Delaware, and New Jersey. In addition, the disease has been diagnosed in other States. Strong experimental evidence indicates at least two types of virus, tentatively designated as "western" and "eastern", but the outward appearance of the disease is practically the same in both cases.

Usually there are three phases of the infection (figs. 40-42). In the first, which is often unnoticed, there is a mild indisposition generally accompanied by a rise in temperature. In the second phase, distinct



FIGURE 40.—Horse in early stages of encephalomyelitis, showing drowsiness and distortion of the upper lip.

nervous symptoms There is appear. either a loss of appetite or difficulty in eating and drinking. Water often runs from the nostrils when the animal attempts to swallow. Frequently there is grinding of the teeth and twitching of the muscles of the lips. jaws, or other parts of the body. The animal may become very drowsy and stupid, the head often hanging low. In other cases the animal walks incessantly. often with a swaving or stumbling gait. Sometimes the animal becomes very excitable and lunges about.

In the third and last stage, the horse falls to the ground where it may lie

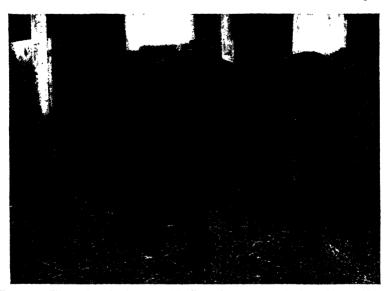


FIGURE 41.—The same horse in a later stage of the disease showing extreme sleepiness with animal leaning against the stall wall.

quietly or make running movements with the legs. It often beats its head about violently, causing bruising. The functions of elimination may be retarded. The disease usually terminates fatally in cases that reach the third stage. At some time during the course



FIGURE 42.—Animal in the final stage of collapse with body supported by stall wall and nose resting on floor.

of the disease a staggering gait, sleepiness, and a yellow discoloration of the eye membranes are almost always to be observed.

Course of the Disease Rapid

Usually the disease runs a rapid course and in cases that terminate fatally, death ensues in from several hours to a few days after the onset of symptoms. Recoveries have ranged from as low as 2 percent in some outbreaks to as high as 70 percent in others. Animals that survive, however, are likely to sustain permanent damage to the brain or spinal cord, a condition causing the so-called "dummy" or otherwise impaired animal.

Although research has not yet revealed definitely how the infection commonly spreads, results thus far indicate that blood-sucking insects, particularly mosquitoes, are probably an important cause. Outbreaks have been observed to be most common during the summer and early fall months when insects are prevalent. With the coming of frosts the disease tends to disappear. Outbreaks also are most common in low-lying, moist regions which are favorable to insect life. There are other possible means by which the disease may spread, such as inhaling or eating infectious material, especially if there are abrasions in the mouth cavity.

Methods of Preventing Losses

Pending the results of further research, the following procedure should be helpful in preventing losses from encephalomyelitis. Isolate affected animals in screened quarters, where possible, or if not feasible, prevent insect bites by use of repellent sprays. Segregate the normal animals in similar quarters; horses not at work should be stabled during the season of insect prevalence. The use of insect repellents and nets on horses in the field is to be encouraged. Animals dead of the disease should be disposed of promptly by burning or burying deeply and the stables, sheds, or corrals used by the affected animals should be thoroughly cleaned and disinfected. A specific antiencephalomyelitis serum is now commercially obtainable and available experimental data appear to warrant its use in the prevention, as well as treatment, of the disease. The immunity induced by the serum appears to be of short duration and for that reason, to be effective, the serum treatment must be repeated at intervals.

Cool, comfortable quarters, protection of the animal against possible injury by the use of adequate bedding or slings, permitting the animal to drink fresh water at all times and supplying small quantities of succulent feed are advisable. In all cases treatment should be administered by a trained veterinarian and other control measures should be under his supervision. Unguided home treatment, such as promiscuous drenching or other administrations which may be suggested by unqualified advisers, is to be discouraged since it usually lessens the animal's chance of recovery. Failure to observe the precautions outlined may result also in a spread of the infection.

L. T. GILTNER and M. S. SHAHAN,

Bureau of Animal Industry.

RRIGATED Land Needs
Drainage to Correct
Excessive Salinity

The dissolved salts that occur in irrigation waters constitute an important cause of injury to irrigated lands. These dissolved salts tend to accumu-

late in the soil and subsoil as the water of the soil solution in the root zone is absorbed by crop plants or dissipated by evaporation. Their injurious effects may operate in either of two ways; they may accumulate in the soil solution until that solution becomes so concentrated as to be directly injurious to crop plants, or with increasing concentration there may be reactions of base exchange between the salts of the soil solution and the soil itself by which the physical condition of the soil is impaired. Such reactions may cause the soil to become defloculated and relatively impermeable to the movement of water into and through it.

There are two primary sources of the salinity found in irrigation waters. The larger part of such salinity is derived by the solvent action of water operating on the rock material of the earth's crust during the processes of soil formation. The other and smaller part comes from the earth's interior, whence the constituents rise as gases mixed with superheated water vapor. As these gases approach the surface they condense and blend with subsurface or atmospheric waters in which the salt constituents are dissolved.

These dissolved salts, whether derived from soil weathering or magmatic sources, move with the waters of solution. In the arid regions where drainage is deficient and evaporation is high they may be precipitated, as the result of evaporation, in the soil or in sediment that is deposited in valleys by erosion. Most of the naturally saline soils of our arid regions have been formed in this way.

By similar processes soluble salts have been deposited in sedimentary soils or rocks formed during earlier geological periods. As such salt-bearing soils or rocks become exposed by erosion or penetrated by percolating waters, their salts pass into solution and thus contaminate the surface streams or underground water supplies that may be used for irrigation.

Irrigation waters that contain the least salt are those that come directly from the rain or snow that falls on watersheds of hard rocks. Such rocks when weathered into soil yield comparatively little soluble material to the drainage waters. Where the rocks of the watershed are of softer material, such as shale, the processes of soil formation yield larger quantities of soluble salts that are carried away in the drainage, whether through surface or underground channels. It is the desert areas of watersheds or drainage basins that contribute the most salt to irrigation supplies. These desert areas yield comparatively little water, but the soils are often highly saline because of infrequent leaching; and when an occasional rain falls even over a restricted area, the water dissolves the accumulated salt and carries it to the drainage stream or into some natural underground reservoir.

A Man-Made Source of Salinity

The sources mentioned above are the more important natural sources of salinity. There is another source to be considered that may be thought of as man-made or artificial. This comprises the irrigated lands that are located along stream channels. Some of these lands are naturally salty because the soil was deposited by the action of water containing dissolved salts, and as the water evaporated the salts were left in the soil. But when these lands are irrigated a large part of the water applied as irrigation is evaporated from the soil or absorbed and transpired by crop plants. This water that is evaporated or transpired leaves its salt burden in the soil. Not infrequently irrigation water may contain a ton or more of dissolved salts in each acre-foot, and under arid conditions as much as 2 to 4 acre-feet of irrigation water may be applied to each acre of cropped land

Thus it will be evident that irrigated lands on which saline irrigation waters are used become potential sources of salinity in respect to the tributary streams. In order to prevent the impairment of these lands through the accumulation of injurious concentrations of salts in the soil solution of the root zone it is necessary that the subsoil be drained either naturally or artificially. It is necessary also that the quantity of irrigation water applied to the land shall be sufficient not only to supply the needs of the growing crops and the unavoidable losses by evaporation from the soil but also enough more to cause some leaching of the root zone into the drainage system.

more to cause some leaching of the root zone into the drainage system. The drainage system of an irrigated district should carry away from the root zone of the cropped land a quantity of dissolved salts at least substantially equal to the quantity carried to the land in the irrigation water. Because such a large part of the irrigation water is dissipated by evaporation and transpiration it is obvious that the

drainage water from irrigated lands should carry much higher concentrations of salts than the irrigation water if a favorable salt balance for the district is to be maintained. Where irrigated lands are located along a stream channel, water is diverted from the channel for irrigation and a part of it returned to the channel as drainage. Each successive repetition of diversion and return diminishes the volume of the stream discharge and increases its salt concentration. Thus it may be said that the irrigated land along a stream in effect becomes an important source of salinity because it increases the salt concentration even if it does not add materially to the total salt burden of the stream.

The conditions described as occurring along a surface stream occur also to some extent in respect to underground water supplies that are developed for irrigation use by means of wells. These underground supplies, if they are not to be exhausted, must be replenished by percolation from surface sources. Deep percolation from irrigated lands is one of the sources of such replenishment, and consequently it is to be expected, as it has been found, that such percolating waters convey dissolved salts into the underground reservoirs from which irrigation supplies are drawn.

C. S. Scofield, Bureau of Plant Industry.

AND to Spare—A
Conservation Problem
in the Lake States

What to do with 60 million acres of roughly wooded, cut-over, and other wild land is the problem which is being forced upon the Lake States, Michigan,

Wisconsin, and Minnesota, by ever-increasing tax delinquency. This large area, nearly half the total land of the region, stripped of its



FIGURE 43.—Most of the wild land of the northern Lake States is suitable for the long-time undertaking of forestry.

forest wealth, is in its present condition a liability rather than an asset. Faced with mounting taxes and shrinking incomes, owners

have been allowing cut-over land to revert to public ownership on an extensive and ever-increasing scale. Aside from a question of general welfare, the State administrations are faced with the problem of what

to do with those orphan acres.

The Lake States have, however, been pioneers in land-use planning and are approaching the problem in a systematic and scientific way. In 1930 the Governor of Wisconsin appointed a special land-use committee to analyze the trends in agriculture, forestry, and recreation, and to recommend to the State a program of land management. similar committee in Minnesota and several in Michigan have been at work at the same problem. A number of special studies have been made by the Lake States Forest Experiment Station at St. Paul. A very comprehensive and detailed study of the land-use problem in the 14 cut-over counties in northern Minnesota, together with recommendations for a definite program of action for each county, was made cooperatively by the University of Minnesota and the Bureau of Agricultural Economics of the United States Department of Agriculture. assisted by other State and Federal agencies. Finally, the Forest Service in its "national plan for American forestry" 2 made specific recommendations concerning forest development in the Lake States. As a result of these investigations a program for the future management of a part of these 60 million acres is taking shape (fig. 43).

Decrease in Farm Area of Lake States

During the decade 1920-30 there was a 2-million-acre decrease in farm area in the Lake States with immediate prospect of further reduction in crop acreage. Even looking ahead several decades, it seems unlikely that agriculture will demand more than 3 million acres of the available wild land for intensive cultivation—a million acres in each State.

Plans for public forests, as developed up to 1932, envisioned 12 to 13 million acres of "wilderness" and other areas for recreational purposes, including nearly 4 million acres in national forests, 7½ million acres in State forests, and 2 million acres in county forests. Parks, game refuges, summer homes, etc., occupy 2½ million acres and may eventually extend to several million more, but many of these needs may be met by proper use of the public forests.

Thus the commonest forms of land use—agriculture, forestry, wild-life conservation, and recreation—may lay claim to less than a third

of the available wild land in the three States.

The full significance of the problem cannot be grasped, however,

without consideration of the nature of the land.

The area is one of short, cool growing seasons; mostly the soil is poor—either sandy, swampy, stony, or rough; it is usually hard to clear; there is a long haul to market; and scattered settlement has caused an unfavorable tax situation. Some very good land is to be found and a few localities excel the more settled agricultural parts of the States in fertility and future possibilities, but these are only sufficient to warrant an agricultural program looking toward the gradual transfer of scattered settlers to these more favorable areas. There is no room for an influx of settlement.

² A detailed summary of this report. entitled "Major Problems and the Next Big Step in American Forestry", has been published by the Forest Service.

From the standpoint of forest management, the area as a whole is so badly run down from overcutting and fire that a long time and considerable investment of money will be required to restore it to productivity. The lands now returning to public ownership are like a mine from which the pay lodes have been stripped, the tunnels allowed to cave in, and the workings to fill with debris.

Land Classification and Zoning

As a first step in reclaiming the cut-over land, the State committees have strongly urged a systematic classification that will (1) guide future agricultural development by segregating the most promising crop land, (2) aid a sensible forest program by sorting out the areas most suitable for forest growth, and (3) designate preferred areas for wildlife and other land uses.

Instead of the present haphazard settlement in the cut-over area, so detrimental to economical local government, settlement must be concentrated on the better lands, enabling the residents to effect sub-

stantial savings in schools, roads, and other public services.

In spite of its run-down character most of the unused land is more suitable for the long-time undertaking of forestry than for any other use, particularly where so much land has been devastated and must be rebuilt. The sustaining power of any public-forest program is the most vital consideration. The program, soundly conceived, must set for itself a realizable goal in terms of probable future appropriations and general public support. A perfectly feasible public-forest program might include State-wide fire protection, extension of public forests, gradual public acquisition of abandoned land within these areas, and more careful management of selected tracts.

It has been estimated that reasonably good fire protection for the entire forest area can be provided at an average cost of about 4 cents per acre or a little less than \$2,400,000 per year. Two-thirds of this amount was actually provided by State and Federal Governments in 1931. On the better lands the immediate result will be a better quality forest and better forest growth. On devastated areas it may require one or more tree generations to restore valuable forest cover, though during this period crops of fur and game may be harvested (fig. 44).

The inclusion of areas within the exterior boundaries of State, county, or national forests does not interfere with private ownership of land or even the selective development of farming, but tends to discourage unwise agricultural development in these areas, removes the public lands from sale and speculation, and gives a sound basis for reorganizing local governmental services. For efficient administration, ownership should be concentrated partly by exchanges, partly by public foreclosure on long-term delinquent land, partly by public purchase.

Cooperative Management Feasible

It may take many years to straighten out completely the mixture of ownership. In the meantime, some type of cooperative management should be feasible. This must at the outset be quite simple and inexpensive. Experience on national forests indicates that an extensive type of management, exclusive of fire protection but including prevention of trespass and care of game and recreational resources, etc., can be effected for about 4 to 6 cents per acre annually.

Only when a careful classification of the land has been made, more of the better forest land placed in public ownership, and the burdensome cost of acquisition and organization absorbed, can available public financial resources be profitably invested in any intensive type of forest management such as is practiced on the better forests of Europe. It has been proposed that one-third of the public forests should eventually be put under intensive management in the Lake States.



FIGURE 44.—Temporary aspen stand being converted naturally to fir and spruce through dependable fire protection.

In short, the answer to the question, what should be done with the millions of acres of wild and unused land in the Lake States, is forestry. Where practicable this may include extensive planting, cultivating, thinning, and pruning of trees, but over larger areas a less intensive but vitally important form of forestry is needed—a sort of benevolent custodianship which will prevent further abuse of the land and give nature a chance to restore the lost forest wealth.

R. N. CUNNINGHAM, Forest Service.

AND-USE Study in Georgia Lays Basis for Purchase Project The old plantation piedmont Cotton Belt of Georgia was selected as a major area for study by the Bureau of Agricultural Economics in its investigation of land-use

problems. The general objective of the study has been to ascertain facts from which there may be developed public and private programs of action to bring about the profitable utilization of land and to improve the economic and social conditions of the rural population. On the basis of the facts developed in the study, the Federal Government has initiated a submarginal land purchase project in the State.

The first major segment of the study was a State-wide survey. This revealed the outstanding fact that the bollweevil invasion in 1920 merely precipitated a break-down, which had been under way for a number of years, in the agricultural plant in important sections of the This was particularly true in the lower piedmont. In 23 counties, for example, the agricultural plant (total land in farms. minus woodland) was larger in 1880 than it has been since. Probably the peak in those counties was reached before the Civil War. The decline up to 1930 ranged from 20 to 50 percent.

On the other hand, 43 counties had more acreage in their agricultural plant in 1910 than they had at any previous or more recent date; 55 counties reached their peak in 1920; and 36 counties in 1930. Of the last group of counties, 16 are located in the middle Coastal Plain. with some concentration in the Tobacco Belt. The shifting of cotton production northwardly in the piedmont and the expansion in horticultural pursuits in other sections of the State accounted for the

increase in the remaining 20 of these 36 counties.

Generally speaking, the decline in agricultural development started in the old plantation piedmont Cotton Belt and progressed northward and southward. The decline, in large part, is the result of a detrimental land-use cycle practiced mainly by cotton farmers. Allowing land to revert to forest or other vegetative cover is merely one step in that cycle. Land was cultivated until erosion gullied the fields or washed the surface away. Forest or other natural vegetative cover tended to check erosion and gradually to build a new topsoil. Approximately 85 percent of the land in the 35 counties (covering about 25,000 square miles), representing the old plantation piedmont Cotton Belt, has been used for cultivated crops one or more times in the At present only 24 percent of that area is being used course of years. for cultivated crops.

System of Farming Unchanged

The system of farming practiced—a system which does not include adequate protection against erosion, or leave the steeper slopes permanently in woodland—has not changed. When land was no longer suitable for cultivated crops it was allowed to pass out of cultivation and to revert to such vegetative cover as nature provided. Frequent fires, often deliberately set on the assumption of making better pasture, or for other reasons, reduced much of the area to waste. drain upon land resources was heavy. Cheap labor made that possible until the bollweevil invasion no longer made it profitable for the landowner to keep croppers on his land and to guarantee their sub-Since the bollweevil invasion, practically all of the commercial stands of timber have been cut and sold. With these sources of cash income removed, the decline in agriculture for the 35 counties, as a whole, was on a scale not exceeded elsewhere in the country. The acreage in harvested crops in 1924 was but three-fifths of that of 1919.

There was a decrease in rural population in that belt between 1920 and 1930 of 120,019, or 23 percent. In that same period the population of 2 counties decreased over 40 percent; 7 counties, 30 percent to 40 percent; 12 counties, 20 percent to 30 percent; 6 counties, 10 percent to 20 percent; and in 2 counties the decrease was less than 10 percent. Three counties had an increase in population. present (1930) rural farm population in those counties is 297,104, of which 56 percent is colored.

By far the greater number of the land holdings or ownership of 2 or more acres in 24 of these 35 counties are owned by residents of the county where the land is located, or by residents of adjoining counties. Of the 25,154 ownerships, 84.6 percent fall in that class; 10.9 percent are owned by residents of the State but beyond adjoining counties; and 4.5 percent by residents outside the State. The non-State residents own 6 percent of the total acreage, as compared with 80 percent for residents within adjoining counties, and with 14 percent for residents in the State outside of the adjoining counties. These facts suggest that the development of sound land use is not handicapped because of distant nonresident owners.

Owner Operators the Largest Group

Owner operators represent the largest group of landowners, owning 38.5 percent of the total acreage, as is shown in table 10. Administrators and executors of estates, and banks and mortgage companies are next in importance. Land held by estates for settlement among heirs, or until minors come of age, makes up 10.5 percent of the acreage, which is a larger figure than is generally recognized. The amount of land held by banks and mortgage companies is significant in that it has been increasing in many counties since 1929.

Table 10.—Acreage of land ownerships by business of owner old plantation piedmont Cotton Belt in Georgia

Business group	Acreage	Per- centage	Business group	Acreage	Per- centage
Owner operators	1, 792, 740 174, 207 139, 466 486, 546 357, 007 14, 896 10, 266 36, 232	38. 5 3. 7 3. 0 10. 5 7. 7 . 3 . 20 1. 20	County	13, 394 0 1, 597, 137 10, 591 4, 651, 347	0.30 0 34.3 ,20 100.0

County records do not reveal the acreage of land owned by the county, or the acreage the county could acquire because of tax delinquency. The county figures given in table 10 are very incomplete.

Partial analysis of data suggests that a material proportion of landowners (resident and nonresident) fail to supervise the management of their lands. Management is, in large part, left to croppers or to other tenants, who lack information or capital necessary for proper management. The gradual destruction of the land in cultivated crops by the ravages of erosion and by careless burning of soil-building vegetation and young timber on land previously destroyed by erosion is, as a consequence, general rather than exceptional over the area. Instability of land ownership has proved to be the consequence.

This study has revealed that the existing maladjustments in the use of land resources are organic and not functional in character—that is, that they have resulted from traditional farm-management practices rather than from the bollweevil invasion, which corresponded with the period of general depression in agriculture beginning in 1921.

Second Phase of the Investigation

The facts thus revealed in the State-wide survey in general, and in the 35 counties representing the old plantation piedmont Cotton Belt in particular, led to the second phase of the investigations—the selection of five laboratory areas for intensive study of relationships among character and intent of ownership, farm management practices, soil conditions, fiscal policies and practices, land use, and soil and erosion factors. The results of this many-sided attack on maladjustments in the use of land are in process of tabulation and analysis. In order to provide a basis for projecting the results secured from these laboratory areas to other parts of the 35 counties, a cross section of the entire region of one-eighth of a mile wide and 207½ miles long was mapped as to soil type, slope and erosion classes, and land use. Ownership data were obtained from all counties. The forested land was classed by type of forest cover, stand, density, volume, and age. Idle land was classified as to physical suitability for cultivation, pasture, or timber. The data obtained also will furnish a basis for the classification of the lands according to their suitability for wildlife.

A third major segment of this study consisted of making a detailed classification of land of the entire area of four adjoining counties in accordance with the use for which it is best suited. This classification, together with an analysis of fiscal, social, and related problems, will illustrate, by location, the need and a method for rural reorganiza-

tion applicable to other sections of the State.

As an initial step toward effecting the materalization of sound landuse planning programs of action, a Federal submarginal land project, located in these four counties, has been tentatively approved. One hundred thousand acres of submarginal farm land, on which approximately 400 families reside, will be purchased and diverted to more extensive uses. The families located on this land will be resettled on adjoining land better suited for growing maintenance crops and noncompetitive cash crops adapted to this area. This project will demonstrate the economic soundness and social desirability of rural reorganization and the program of study sketched above will point the way for expansion of needed reorganization to other areas.

WILLIAM A. HARTMAN, Bureau of Agricultural Economics.

EAD Arsenate Substitutes
Still Sought for the
Control of Fruit Insects

The Department of Agriculture has constantly before it the urgent need for a substitute for lead arsenate in the control of the codling moth on

apples and pears, as well as for the control of other insects wherever the use of this poison results in harvested products bearing residues

that may be injurious to human health.

Lead arsenate has been the standard stomach poison for the control of chewing insects for 30 to 40 years, and its use has been steadily increasing. During recent years, however, there has been a growing realization of the danger of serious chronic effects on human beings from the regular ingestion of minute quantities of either lead or arsenic. One of the important tasks of the Bureau of Entomology and Plant Quarantine is to develop some material as effective as lead arsenate and yet much less injurious to human health.

Although lead arsenate is generally recognized as the standard insecticide, there are many chewing insects for which it is only partially effective. Even in the control of the codling moth, or apple worm, for which many million pounds of lead arsenate are used annually, the material falls far short of giving satisfactory control, expecially under conditions of high worm population. The real objective, then, is a better insecticide, and even if there were no spray-residue problem a search for new and more effective stomach poisons would still be needed.

This search has involved the laboratory testing of many hundreds of new materials, followed by the testing of the more promising ones under practical orchard conditions. Although the goal has not been reached, it is believed that the information obtained thus far will aid in pointing the way to the ultimate development of a new insecticide.

The use of arsenic combined with some element less objectionable than lead would be a partial solution of the problem. Extensive work has been carried on with a long list of other arsenicals, but none has been found equal to lead arsenate for the control of fruit insects. Prominent among these is calcium arsenate, which is useful in the control of insects on many crops. Against the codling moth, however, it has been found definitely less effective than lead arsenate, and in the control of severe infestations the difference is an important one. As a further disadvantage, calcium arsenate is much more apt to injure foliage than is lead arsenate. Work is being continued with this group of materials, however, in the hope of developing some less objectionable arsenical.

In the past 6 years the Department has done a great deal of work with certain compounds of fluorine. Among these materials, sodium fluoaluminate, also known as cryolite, has been found of considerable value in controlling the codling moth in the arid areas of the Northwest. In fact, it has frequently given more satisfactory control than lead arsenate in those areas. In the more humid middle-western and eastern areas, cryolite has given less consistent results. Barium

fluosilicate has also given encouraging results.

When the work with these compounds was first undertaken, little was known about the toxicity to human beings of fluorine in the minute quantities that would be present in a spray residue. The results of recent experiments and observations, however, have not been favorable to the use of the fluorine materials, and it is questionable whether they can be used any more freely than can lead arsenate. The Bureau of Entomology and Plant Quarantine is cooperating with the Bureau of Plant Industry in experiments with the removal of fluorine residues, since it is evident that the use of the fluorine insecticides on apples and pears must be followed by processing of the fruit to remove the residues.

Nicotine as a Possible Substitute

Nicotine is being investigated as a possible substitute for lead arsenate in codling-moth control. Nicotine has a high initial toxicity, but in practical field application it loses this toxicity very rapidly. Nicotine is rather volatile at high temperatures and, being soluble in water, is readily washed off by rain. Considerable progress has been made toward the working out of methods whereby the nicotine can be made more persistent on the foliage. Nicotine can be made considerably more effective by applying it with a dilute emulsion of one of the

highly refined oils. This combination has been used by a number of orchardists on a small commercial scale, but it is open to certain disadvantages. When the oil-nicotine combination follows applications of lead arsenate, it renders the arsenic and lead extremely difficult to remove at harvest time. The extent to which oil can be used on trees in foliage is more or less limited, even when the more highly refined oils are used. The oil sprays are likewise incompatible with sulphur fungicides, which in many of the humid areas must be used through the greater part of the season. Last, but by no means least, the frequent use of nicotine and oil is rather expensive, a factor which commercial growers cannot overlook.

Another possible method of improving the effectiveness of nicotine is by combining it with tannic acid to form a compound that is much less soluble and volatile than nicotine alone. The results with this combination have been favorable in certain localities, but much less favorable in others. A combination of nicotine with bentonite has also given encouraging results under some conditions. There is, therefore, every reason to believe that further work may result in the development of practical and economical ways of using nicotine. An unknown factor is the effect of nicotine in such combinations on the health of the consumer. Research work on this phase of the problem is being

conducted by the Bureau of Chemistry and Soils.

Derris, Cubé, and Pyrethrum Tested

Derris, cubé, and related plants have also been investigated rather extensively as possible substitutes for lead arsenate. The roots of these plants contain rotenone and other constituents that possess definite insecticidal value. Unfortunately, however, these constituents are rather unstable when exposed to intense sunlight, and methods of using the materials in the control of the codling moth and other fruit insects have not yet been fully developed. The materials possess such a high initial toxicity, however, that they still offer a promising field for investigation. As with all the other substitute materials that have been considered, the exact relation of the derris derivatives to human health has not been established. Because of their instability, however, it is believed that, if they are found to be dangerous to human health, processing methods can be readily developed for their removal or for their transformation into nonpoisonous compounds.

Pyrethrum, which is extensively used in the preparation of fly sprays, also contains toxic ingredients that may ultimately prove useful in codling moth control. The compounds found in pyrethrum are likewise very unstable, and methods of keeping them longer on the fruit and foliage must be worked out, if they are to find a place in the

codling moth control program.

To sum up the present status of the development of new insecticides, a generally practical substitute for lead arsenate in the control of the codling moth and other fruit insects has not yet been developed. On the other hand, many of the materials now under experiment possess the first essential, a high degree of initial toxicity to insects, and there is every reason to believe that methods will be worked out whereby some of these, or other materials as yet untried, will ultimately be developed into effective and unobjectionable substitutes for lead arsenate.

B. A. Porter, Bureau of Entomology and Plant Quarantine.

IVESTOCK Poisoned With
Hydrocyanic Acid Can Be
Saved by Prompt Treatment

Each year many animals, principally sheep and cattle, die as a result of their having eaten plants which produce hydrocy-

anic or prussic acid. Some of these plants are native and grow wild in the pastures and ranges, and some are among our most valuable cultivated forage plants. Every State contains one or more of these plants so that the losses occasioned by them concern every agricultural community. The principal cultivated plants which are involved are the sorghums, Johnson grass, Sudan grass, and flax; the native plants are the wild cherries and arrowgrass. Although scientific studies have furnished some knowledge of the conditions under which these plants are most likely to poison animals, no satisfactory method has heretofore been suggested for treating poisoned animals. This situation has existed, no doubt, because of the rapidity with which the poisonous substance acts.

Recently in the practice of human medicine, methylene blue, sodium nitrite, and some other substances have been used with considerable success against prussic-acid poisoning, and these have been tried experimentally on animals similarly poisoned. The results suggested the possibility of developing methods of treatment by which one or more of these drugs could be used effectively by the practicing veterinarian.

Small Quantity Enough to Kill

Because the quantity of prussic acid that is developed in the different plants varies between wide limits, it was necessary in the preliminary experiments to use the poison in a form that could be better controlled and to know just how much of it would produce fatal results. For this purpose potassium cyanide was administered by the mouth and it was determined that, for cattle, the smallest fatal dose, in terms of the hydrocyanic acid itself, was very close to 0.000204 percent of the animal's weight, and for sheep it was 0.000231 percent. The next step was a comparison of the effectiveness of the various substances that had been recommended as remedies for poisoned animals.

In the first series of experiments sheep were used, and four of the recommended substances were tried. These were methylene blue, sodium nitrite, sodium thiosulphate, and sodium tetrathionate. A definite quantity of each remedy was dissolved in water and injected into the abdominal cavity of a poisoned animal. The results indicated that, although all of these substances were to some extent effective as antidotes, two of them, sodium nitrite and sodium thiosulphate, were more satisfactory than the others.

Combination Treatment Most Effective

In a second series of experiments cows were used, and sodium nitrite and sodium thiosulphate, both separately and in combination, were tried as remedies. In all the cattle experiments, solutions of these substances were injected directly into the jugular vein. Each one of these remedies, when used alone, prevented death in animals given 1.4 times the amount of the poison necessary to kill. When both remedies were administered in combination it was found that animals

could be saved that had received twice the fatal dose. In other words, the combination of the two remedies was more effective than either one

by itself.

A third series of tests was then made to determine the effectiveness of the combination of sodium nitrite and sodium thiosulphate with sheep that had been poisoned by hydrocyanic acid. As in the first series, the remedies were injected into the abdominal cavity. The results demonstrated more clearly than in the cattle tests the superiority of the combination of the two remedies. When used by itself one of the remedies prevented the death of a sheep that had received 1.66 times the quantity of hydrocyanic acid that was necessary to kill. When both remedies were used in combination, animals were saved that had received three times the dose of the poison that ordinarily would cause death. In other words, the combination was nearly twice as efficient as either remedy by itself.

To test the combined remedies against poisoning by plants that produce hydrocyanic acid, a number of sheep that had been fed known quantities of arrowgrass were treated. The curative procedure in the tests was the same as when the potassium cyanide was administered. The results in most cases were successful when less than 2.5 times the

quantity of arrowgrass necessary to kill had been eaten.

Sodium nitrite, however, is a moderately poisonous substance, so it was deemed important, as a precautionary measure, to determine just how much could be safely administered, also to determine what effect, if any, the presence of sodium thiosulphate might have on the poisonous effects of the nitrite. The results of a series of experiments with sheep showed that a safe therapeutic dose of the sodium nitrite for a sheep is 1.2 grams for 100 pounds of animal weight, that twice this amount is dangerously close to a fatal dose, and that more should never be administered.

Prompt Treatment Necessary

As stated before, hydrocyanic acid acts very quickly after it has been administered. Consequently a series of experiments was conducted to determine just how promptly after poisoning the combination of the two remedies must be given to be effective. For animals that had been given 1.5 times the smallest quantity of the poison required to kill, it was found that if the animals were treated within 4 minutes after the poison was given there were chances of saving the animals, but if a longer time elapsed the animals were liable to die. When plants producing prussic acid have been eaten, the symptoms of poisoning do not develop quite so rapidly.

As a result of the facts presented, it is recommended that in cases of poisoning by any of the plants mentioned, a local veterinarian should be called at once and consulted regarding the giving of remedies. If possible, he should administer them, or they should be administered under his direction. Notwithstanding the need for early treatment, practical experience shows that veterinarians who answer calls promptly may save many animals by the method described. This is particularly true when, after a herd or flock has been turned out to pasture, a veterinarian is called at once if symptoms suggestive of prussic acid poisoning are observed in any of the animals.

In the case of sheep weighing approximately 100 pounds, inject intraperitonally a water solution containing 1 gram of sodium nitrite and 2 to 4 grams of sodium thiosulphate. For cattle weighing 500

pounds or more, 2 to 3 grams of sodium nitrite and 10 to 20 grams of sodium thiosulphate should be used, and the solution should be iniected intravenously. With both sheep and cattle the injection of thiosulphate may be repeated, but only one injection of the nitrite should be given. The solutions keep well and so may be made up ready for use. If desired, they can be sterilized by boiling without being materially changed.

> A. B. CLAWSON, H. BUNYEA, and J. F. COUCH. Bureau of Animal Industry.

Can be Controlled by ■ Chemical Treatments

UMBER and Log Stains Unseasoned lumber and logs from some of the most important commercial trees are subject to serious discoloration. caused by sapstaining and molding

fungi. The fungi may enter logs lying in the woods or at the mill, or lumber in the mill yards, or during subsequent handling. Log infections continue to develop in the lumber cut from the logs and serve as a source of infection to other lumber in the same yards. Damage in transit is especially common in export shipments. Such discolorations have lowered the quality and increased the cost of wood products both to the manufacturer and to the consumer. While strength properties of the wood are ordinarily little affected, its utility

value is greatly reduced where a natural finish is desired.

During recent years a decided prejudice against the use of discolored products has developed among domestic and foreign consumers. This prejudice has been in part justified by the fact that decay in early stages is often associated with and masked by stain. Foreign buyers particularly have objected to discolored material and have been allowed large damage claims or have shifted their purchases to less susceptible woods. In an effort to meet consumer demands for unstained lumber, manufacturers have adopted more rigid grading rules which limit the amount of discolored material in the common as well as in the finish grades of lumber. The increased prejudice, coupled with the fact that second-growth timber contains more sapwood than does virgin timber, has made the problem of control increasingly important.

Control Methods Commercially Applicable

Investigations on sap stain and mold control were begun in 1928 with financial assistance from lumber agencies of the Gulf States. A preliminary survey indicated that the development of cheap and efficient antiseptic chemical treatments offered most promise of yielding control methods of immediate commercial application. Current chemical treatments were of limited usefulness, since they were only partly effective on softwoods and not applicable to hardwoods. In addition, the small mills with few exceptions had not found it practicable to incorporate current stain-control methods in their manufacturing practices. The tests conducted since 1928 have provided the large pine and hardwood industries with equally cheap and much more efficient treatments for lumber, veneer, and other wood products.

Two of these treatments, low concentrations of an organic mercury compound and a mixture of chlorinated phenols in water, are effective on both pine and hardwoods and can be used by mills cutting both types of wood. A third treatment, borax in saturated solution, is equally effective on hardwoods, but is inferior on pine. Figure 45 compares the appearance of untreated lumber with that of lumber dipped in one of the new antiseptic solutions. The potential use of these treatments has been materially increased through recent tests demonstrating their feasibility for the small-mill industry. Increased value is indicated also by their prevention of some of the incipient

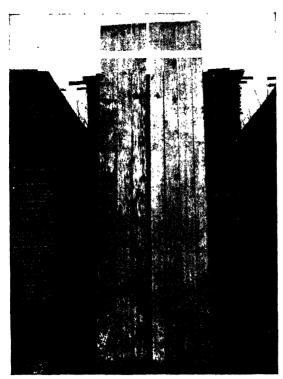


FIGURE 45.—Typical boards from untreated (left) and treated (right) test piles of southern pine lumber.

decay infections originating in lumber during storage periods. Such infections are important factors in replacement costs necessitated as a result of decay of wood in use. Experience so far with export lumber indicates that the treatments will reduce transit losses materially. Continued experimentation is expected to increase their value further for this purpose and for some other products and conditions not yet satisfactorily covered.

Chemical antiseptics similar to those mentioned for stain control on lumber, but with different methods of application, have proved effective in reducing fungus deterioration of stored logs. Recommendations can

be made for the prevention of stain and decay during normal storage periods in the Gulf States for seasons when insects are inactive. Promising results have also been obtained with the use of these materials as pretreatments for the control of stain and decay in fence posts during seasoning prior to impregnation with preservatives.

Economic Value of the Treatments

The development of efficient treatments of low cost and easy application has aided pine and hardwood manufacturers in improving quality of both domestic and export products. It has stimulated an interest in stain control and hence in a generally improved product, as is evidenced

by the wide-spread adoption of these treatments by small as well as by large southern mills. The extension of stain-control methods to the small-mill industry is of decided significance in view of the fact that over 50 percent of the pine production in the South during certain recent years has come from the small mills. The efforts of the wood industry in general to raise the reputation and utility value of its products will be aided considerably if the standard of small-mill

production is improved.

The significance of these stain-control treatments to the foreign buyer is indicated by the frequent specifications for chemically dipped lumber. American lumber is shipped to more than 50 countries, and discolorations occurring before and during transit have seriously handicapped some of the most important species in competition with other woods. Overcutting timber stands to supply the demand for higher grades of lumber has been reduced through sap-stain control and the consequent reduction in the proportion of lumber that goes into the lower grades. In other words, utilization practices have been improved and forest conservation has been aided thereby.

RALPH M. LINDGREN, Bureau of Plant Industry.

ARKETING Agreements and Licenses Buttress Work of Cooperative Associations

During the 19 months since the enactment of the Agricultural Adjustment Act some 55 marketing agreements and 95

licenses have been approved. These agreements and licenses relate to a wide variety of farm products and affect directly or indirectly a large number of farmers. It is important, therefore, to review briefly these activities and to indicate in some measure the place which such activities should occupy in a continuous program of agricultural

readjustment.

The authorization for marketing agreements under the adjustment act is very broad. The only limitation placed upon such agreements is that they must aid in the accomplishment of the purpose of the act, which is to restore the purchasing power of farm products. Parties to such agreements may include producers, associations of producers, processors and others "engaged in the handling of any agricultural commodity or product thereof, in the current of or in competition with, or so as to burden, obstruct, or in any way affect, interstate or foreign commerce."

The marketing programs which have been developed through the medium of marketing agreements and licenses are not readily subject to simple classification. By far the largest groups of programs, however, and those which are likely to be most important as a part of a continuous policy of agricultural adjustment are distinct in that they represent a further development and use of marketing plans which had been previously formulated and to some extent utilized for several years by cooperative and private handlers of particular products. Those familiar with the use of clearing houses and with various efforts at industrywide cooperation in dealing with serious marketing problems in the fresh-fruit and vegetable industry during the past decade will recognize the marketing-agreement program of the past two seasons, insofar as it relates to this group of products, as the logical outgrowth of these earlier efforts. Likewise, the essential features of the marketing agree-

ments or licenses which have been developed in over 40 fluid-milk markets are similar to the various types of marketing plans which have been used by cooperative groups of milk producers for many years.

Agreements Supplement Previous Program

The marketing agreement supplements these previous programs, however, in two important respects. The Agricultural Adjustment Act provides for the immunity of such agreements from the operations of the antitrust laws, which is important in dealing with problems involving interstate commerce. Furthermore, the licensing power of the act has been used as a means of making marketing-agreement programs effective on the minority groups which have not signed the agreement. These two features have made possible in some instances the development, for the first time, of reasonably effective programs for increasing prices to producers in which all handlers have participated. The most successful agreements and licenses are those which have been developed on the foundations built by long-established farmer cooperatives, the members of which, realizing that their own enlightened self-interest coincides with the best interests of their group, have formed the habit of thinking and acting together.

As early as 1914 the growers and shippers of cantaloups in the Imperial Valley of California undertook to regulate the movement of cantaloups to market in an effort to cope with an unprecedented supply situation. The following quotation refers to operations in 1922:

There was no definite cooperative organization as such, but the season was saved from disaster by real cooperation ably seconded by knowledge and facts. Each day, throughout the shipping period, all of the distributors met with the Federal market news service representative, in his office at Brawley, and each shipper gave his intended number of shipments for the day, with destinations. The totals of the intentions were compared with the consuming power of the cities, as charted, and with the shipments they had recently received. If it appeared that certain cities were being overstocked, the plans for shipments were so shifted that a more even distribution would be effected. Single cars were sent to smaller cities not previously slated to receive any, but shown on the records as capable of consuming an occasional carload.³

Here was the essence of a simple marketing agreement similar in many respects to many which have been developed during the past two seasons. This effort, however, was made without proper legal sanction and no means were available whereby any handlers who refused to cooperate could be required to assume their proportionate burden of the

voluntary effort to adjust supplies to market demand.

Later efforts of a similar character, but including more comprehensive schemes for the actual withholding of shipments if necessary, were undertaken by several groups of California fruit and vegetable growers, including the growers of lemons, Valencia oranges, Flame Tokay grapes, Imperial Valley lettuce and cataloups, Watsonville apples, canning peaches, and raisin, table, and juice grapes. In each case the action was taken in order to avoid the prospect of ruinous prices. Somewhat similar efforts to improve the distribution of particular products have been undertaken in other commercial fruit and vegetable producing areas, but usually with less success than that attained in the California experiments with approximate industry-wide cooperation in supply control. An outstanding difficulty in all of these efforts, however, was the fact that there was always a minority group which refused

³ SHERMAN, C. B., A PRACTICALLY PERFECT PIECE OF DISTRIBUTION. Jour. Home Econ. 15: 13-14. 1923.

to cooperate and was, therefore, able to obtain the benefits of the price level established by the cooperating majority without bearing its share of the burden of supply control. One function of a marketing-agreement and license program then is to see that the benefits and burdens involved are, insofar as practicable, equitably distributed

among all producers.

Even with the best of production planning it is to be expected that both with annual crops and with tree fruits, there will be years of heavy production, when, if no control is maintained over supplies marketed, the growers will receive little or no income for their crops. In October and November 1934, for example, a considerable proportion of the Florida grapefruit sold on the New York and Chicago auction markets failed to bring enough to pay the actual cash outlays involved in harvesting and marketing the fruit. In the case of tree fruits these problems of oversupply may persist for several years as a result of an ill-advised, uncoordinated, or promotional development of new orchards made in previous years. In the face of such a situation the growers must of necessity become interested in finding some way of marketing only that quantity and quality of fruit which will at least return more than the cost of harvesting and marketing, and also if possible some means of reducing the harvesting and marketing In such circumstances a marketing program carried out through the use of an agreement and license may not retrieve all of the losses resulting from the previous mistakes in production planning, but it can frequently serve to alleviate the distress incident to the ruinously low prices which often accompany uncontrolled marketing.

The use of marketing agreements in dealing with the problem of supply control or regulation of movement to market is less satisfactory for annual crops than for crops such as tree fruits. Growers who have recently made expenditures for seed, labor, and fertilizer are naturally averse to withholding a portion of their product from the market after it is produced. On the other hand there are many problems involved in attempting to allot acreages or production quotas to individual producers as a part of a marketing-agreement program. It is obvious also that such a program could not be enforced on a minority of growers through the use of the present licensing provisions of the Agricultural Adjustment Act. In the case of the annual crops also acreage and production tend to respond quickly to improvement in price and a marketing-agreement program to be continuously successful must, therefore, include some provision for

maintaining a checkrein on production.

The second important group of marketing programs which have been developed under the agreement and licensing provisions of the Agricultural Adjustment Act relates to fluid-milk marketing. Such programs are in effect in about 45 different fluid-milk markets. In ach case the local organizations of producers have requested the application of this program as a means of improving prices to producers or of assuring equitable treatment to all of the various groups of producers in the area affected. Experience to date has shown that within reasonable limits milk-marketing agreements or licenses are unquestionably of value if they are used to protect producers from the effect of distributor price wars, eliminate the tendency for non-

members of cooperative organizations to nullify the efforts of the cooperators, or to develop protective services for producers such as check testing and check weighing. Too much should not be expected, however, of such agreements and licenses as have been developed to date as a means of dealing with low prices which are directly attributable to burdensome supplies. It may be possible, however, to develop programs which will include definite provisions for adjusting

supplies in line with market demands.

As a purely emergency mechanism the marketing-agreement and license program has also demonstrated its usefulness in dealing with a considerable variety of farm products. In connection with the 1933–34 tobacco program, for example, marketing agreements were used primarily as a means of obtaining a higher price for the growers on the 1933 crop by capitalizing on the action of the growers in agreeing to reduce acreage in 1934 and 1935. Having served this emergency purpose, the agreements with one exception, were not continued. A marketing agreement for disposal of north-Pacific wheat surplus was utilized as a means of removing a burdensome surplus of wheat from the Pacific Northwest in the 1933–34 season. The marketing agreement of the peanut-milling industry whereby a minimum price was established for the 1933 crop was of a purely emergency type and has been superseded by the development of a production-adjustment program including the diversion of a part of the supply into feeds and peanut oil.

J. W. Tapp, Agricultural Adjustment Administration.

MARKETING Studies Show Importance of Increased Efficiency The net income of farmers can be increased either by raising prices to the consumer or by lowering the costs of production and marketing. For

example, bread cost the consumer an average of a little over 8 cents a pound loaf in July 1934. The farm price of wheat was about 80 cents a bushel. A bushel of wheat will make about 64 loaves of bread, so the consumer was paying over \$5 for the bread made from an 80-cent bushel of wheat. The remaining amount went to pay the miller, the baker, the transportation companies, and to pay for other materials such as milk and shortening. If bread prices were raised from 8 cents to 9 cents and costs of transportation, processing, and marketing remained the same the consumer would pay 64 cents more for the bread made from a bushel of wheat and the 64 cents would go to the farmer. However, the same result would be obtained if city bread prices stayed at 8 cents and the costs of transportation, processing, and marketing could be reduced 64 cents.

If the farmers' purchasing power is to be increased and sustained, adjustments are needed not only in the output of farm commodities but in the marketing of those commodities as well. Marketing costs rose rapidly during and immediately after the war and have stayed at high levels ever since. Any substantial improvement in the efficiency of our system of marketing will greatly benefit both the farmer

and the consumer.

The need for adjustments in our marketing methods is brought forcefully to our attention by studies of spreads between farm prices and city retail prices of foods since 1929. In 1929 a month's supply

of 14 important foods cost an average American family \$26.11. By 1932 this cost had fallen to \$16.78. The farm value of the equivalent amounts of food products fell from \$12.40 in 1929 to \$5.54 in 1932. The spread between farm and city prices (or the total of all charges for transportation, processing, and marketing), fell from \$13.71 to \$11.24. In other words, while city prices were dropping 36 percent, the total cost of getting food from the farmer to the city consumer dropped only 19 percent. This failure of marketing costs to fall in proportion to prices of food was a result of the fact that many marketing costs are definitely fixed except over long periods. The relative inflexibility of such costs was to a considerable degree responsible for the fact that farm prices dropped 55 percent—or much more than the drop in city retail prices. In 1929 the farmer got 47.5 cents of each dollar spent by city consumers for these 14 foods. In 1932 the farmer got only 33 cents of the consumer's dollar.

Many Relatively Fixed Charges

Between the farmer and the consumer there are many charges—such as freight rates, for example—which are relatively fixed. It took several years of depression to bring about any reduction at all in many of these charges. As conditions in business and agriculture improve there will doubtless be an attempt to increase such charges; perhaps to predepression levels. Some increases in individual cases may be entirely reasonable and just. The payment of processing taxes and of increased wages makes higher charges in some industries necessary. It is obviously desirable to prevent if possible any unnecessary increases in marketing costs and wherever possible these costs should be decreased by more intelligent and more efficient marketing methods.

The spread between farm and city values of foods has widened somewhat since 1932, but the increase has been very moderate in view of the fact that it now includes the payment of processing taxes on wheat and hogs and that wages have increased. From 1932 to July 1934 the city retail value of a month's supply of 14 important foods increased from \$16.78 to \$18.13, or 8 percent. The farm value of the equivalent amounts of food products rose from \$5.54 to \$6.60, or 19 percent. The spread between farm values and city values increased from \$11.24 to \$11.53, or 3 percent. As a result of the fact that marketing costs increased proportionally less than did prices of food, the farmer's share of the consumer's dollar increased from 33 cents to 36.4 cents. It should be remembered, of course, that the part of the margin represented by the processing taxes goes back to the farmer who cooperates in farm adjustments; so that the real spread between what the farmer gets and what the consumer pays is not quite the total spread between farm prices and city prices.

These figures show that since 1932 the spread between farm product values and city retail values of food products has increased only slightly. The payment of processing taxes and higher wages accounts for at least a large part of the increase that has occurred. Nevertheless, it should be recognized that these spreads are high and probably could be reduced in many cases by more efficient methods of marketing and distribution. Marketing costs in this country increased greatly during and immediately following the war and although they have been somewhat reduced since 1929 they are in most cases still considerably higher than they were before the war. The result is

that in many cases the consumer is paying more for foods and other farm products than he did before the war while the farmer is getting less. In order to procure for the farmer as reasonable a return as possible we must have efficient marketing as well as orderly production.

Spreads between farm prices and city retail prices in the United States are in many cases higher than in other countries and such differences cannot be wholly explained by differences in wage rates. For example, in a number of European countries consumers can buy wheat bread at about one-half the average price in the United States although the price of wheat is higher than in this country. Only a part of this difference can be explained by lower wage rates in Europe. Perhaps the most important reason for the difference is in the different systems of distributing and marketing bread and in the extra services such as wrapping and slicing which American bakers commonly give.

Coordinated Research Needed

It has become apparent in the last few years that we need a broader and more coordinated program of marketing research in order to get at the facts on the basis of which we can improve the marketing of farm products. For that purpose the Department of Agriculture recently organized a Division of Marketing Research in the Bureau of Agricultural Economics. The new Division will be able to study many broad problems of marketing which do not come entirely within the scope of any of the commodity divisions. It will also work with the commodity divisions of the Bureau of Agricultural Economics and with other research agencies to bring together the available facts and to study them for the purpose of finding practical ways of improving our system of marketing.

In connection with a research program in marketing the Department is carefully studying the possibility of using the marketing agreements under the Agricultural Adjustment Act to bring about more orderly and more efficient marketing. It is conducting a series of studies, for example, to determine the extent to which the marketing agreements under the Special Crops Section have improved the prices paid to growers; how they have affected dealers' costs and charges and marketing methods and practices; and how they have affected consumers' interests, including the effects on retail prices,

on availability of supplies and on the quality of food.

Many experiments have been made with the marketing agreements. These experiments include agreements to control supplies, to fix prices to growers, to fix resale prices, and to establish uniform trade practices. The results of these experiments are being carefully studied in order that policies may be worked out which will not only promote more orderly distribution but will lower the costs of marketing, increase consumption, and return to the farmer a better income.

Marketing agreements under the Agricultural Adjustment Act have also emphasized the need for further developments in standardization and in market news. The services which the Bureau of Agricultural Economics has built up in these fields have been indispensable in connection with many of the marketing agreements and in many cases these services have been expanded and modified to meet the special problems resulting from the agreements. The whole program of grading and standardization must be kept flexible in order that

changes in the grades and in their application can be made in the light of increased knowledge of the qualities demanded by consumers and dealers and of more complete facts concerning the relation of

quality factors to the use value of commodities.

Standardization and grading are not only for the purpose of protecting the consumer but also should make it possible for farmers to get premiums for superior quality. Studies of cotton prices and prices of some other farm products have shown the need for changes in methods of marketing in order that premiums for quality may be more fully reflected in the prices paid to farmers. Such premiums are a necessary incentive to the improvement of quality.

There is an increasing interest in grades and standards to be used in the retail trade to identify the quality of foods bought by the consumer. The development of such grades and standards would be of great benefit to the consumer and indirectly to the farmer also.

The most important and most difficult problem in marketing is in bringing about changes in our present methods and practices and in our market institutions, organizations, and facilities in order to promote efficiency and to lower marketing costs. Such a reorganization of marketing methods and facilities requires careful studies of the existing structure of our marketing system and the joint analysis of the economist and the engineer in order to find practical ways by eliminating costly methods and unnecessary services.

Many Wholesale Markets Inefficiently Organized

The wholesale markets for food products in many of our large cities are very inefficiently organized. Facilities have in many cases been built by rival railroads and are not properly located. In many cases the markets for local farm products and for truck receipts are poorly organized and are not coordinated with other parts of the market system. Such a situation leads to unnecessarily high costs of marketing and distribution. Not only the city consumer but the farmer, as well, has a vital interest in reducing such unnecessary costs.

Marketing methods are changing rapidly both in the city and in the country. Such developments as the growth of direct buying by large retail organizations, the increased distribution by motor truck, the direct marketing of hogs, the development of auction markets at country points, the greater number of commodities sold on futures contracts by commodity exchanges, and new developments in methods of cooperative marketing all are experiments which may lead to improved methods. The results of such experiments must be carefully watched and studied scientifically.

Much can be done to build up a better marketing system by the regulation of methods and practices either by law or by marketing agreements. In addition to such regulation, research and educational work are necessary in order to point the way to practical improvements

in marketing.

Improved marketing and better education can also go a long way toward increasing the consumption of certain foods. Surveys made by this Department during recent years have shown a wide-spread underconsumption of milk. Many city families are also getting inadequate supplies of vegetables and other foods. At least a part of

this underconsumption can be remedied by better marketing and distribution.

FREDERICK V. WAUGH, Bureau of Agricultural Economics.

ASTITIS of Cattle May be Controlled by Tests and Sanitary Procedures

The best present evidence indicates that the cattle disease, mastitis, also known as garget and mammitis, exists to some extent

in a large number of dairy herds in this country, probably in the majority. In some of these herds, nearly one-half of the milking cows are affected.

One species of bacteria appears to be responsible for about 90 percent of the cases of mastitis. The disease produced by these bacteria is as a rule of chronic form. In many cases no indication of infection is observed other than the occasional appearance of flakes in the milk and a decrease in milk production. Other cows, however, may suffer recurrent attacks of acute mastitis in which the udder becomes hot, swollen, and painful, and the milk secretion drops abruptly or may stop entirely. Under proper management the acute condition subsides rather quickly and the udder returns to its former state, but the infection remains. Relatively few cows seem to recover completely from the disease, which persists in the udder from one lactation period to the other without any disturbance in the general health of the animal.

Methods of Detecting the Disease

Although attempts have been made to cure the disease by various measures, none has yet proved to be generally effective. Since the mastitis bacteria appear to spread from the diseased to healthy animals through milking, either by machine or hand, a promising means of controlling the disease is the detection of the infected animals and milking them after the healthy ones. Many tests have been devised to find these diseased animals and some of them have been investigated by the Bureau of Animal Industry.

All but one of the tests studied depend upon detection of changes produced in the milk by the bacteria which cause mastitis. The test which does not relate to the composition of the milk is made by palpating the udder for the presence of changes in its physical character. When the udder becomes infected, the normal glandular tissue is gradually replaced by fibrous tissue. As a result hard nodules or diffuse areas of hardened tissue are felt when the udder is manipulated with the fingers. Such changes are always diagnostic of mastitis.

The most practical test for dairymen is to use the strip cup daily. This is simply a tin cup covered with a fine wire screen or a piece of black cloth. Two or three streams of milk are drawn onto the strainer from each quarter immediately before the animal is milked. Any quarter in which clots are found is infected with mastitis. Inasmuch as clots are not always found in all the infected quarters, the test is not entirely effective. Another measure which can be applied in the stable determines the degree of acidity of the milk as soon as it is drawn from the cow. The test consists in adding a given quantity of a color indicator, bromothymol blue, to a definite quantity of milk.

If the change in color shows an appreciable increase in alkalinity or acidity, mastitis is present. The proper interpretation of this test requires considerable skill, and even experienced persons may overlook some infected quarters because milk from such quarters is not always changed in reaction.

Services of Veterinarian Desirable

The other tests which have been tried are best conducted in the laboratory, although a modification of one of them—the chlorine test—has been used in the field. When a quarter is affected with mastitis, there is an increase in the quantity of chlorides present, a condition which in severe cases is sufficient to give a salty taste to Another test is the determination of the number of body cells present in a known quantity of milk. When infection is present in the quarter, the number of cells increases sharply. All these tests, however, indicate only that the quarter is diseased without showing what the cause may be. The only means of determining definitely whether mastitis bacteria are present in the affected quarter is by bacteriological examination of a sample of milk drawn as carefully as possible to exclude outside contamination. By this procedure the number and kind of bacteria may be determined, but because of the labor and equipment required it cannot be used on a large scale.

In spite of the limitations of these tests, a very large percentage of animals infected with mastitis may be detected through the use of a combination of two or more of them. It appears, therefore, that when a herd has been examined with the tests, the infected cows are kept apart from the healthy ones, and other necessary sanitary precautions are regularly taken, the spread of mastitis may be reasonably well controlled. The services of a veterinarian should preferably be obtained so that the tests and other procedures selected for use may be based on his scientific knowledge of the disease.

W. T. MILLER. Bureau of Animal Industry.

TEXICAN Fruit Fly Spread

The Mexican fruit fly is one of I is Prevented by Strict the serious pests of fruit that has Quarantine Enforcement not yet become widely disseminot yet become widely disseminated in this country. In Mex-

ico this fly is probably the worst enemy of fruit with which the growers have to contend. In that country it inflicts heavy damage to the mango, citrus, and stone-fruit crops, the infestation in mangoes at times reaching 100 percent. Should this pest become established in the fruit-growing sections of the United States, untold losses would undoubtedly result. Although Mexico is carrying on a vigorous campaign against the fly, the duty of preventing its entry and dissemination in the United States rests upon the Bureau of Entomology and Plant Quarantine.

The lower Rio Grande Valley in Texas has developed in recent years into one of the major citrus-producing areas of the country. There has been no corresponding development on the Mexican side of the river, and not enough fruit is grown there to supply the local markets. As a result large quantities of fruit are brought to the

border towns from the fly-infested areas farther south. These towns are separated from the American groves only by the width of the Rio Grande, and the imported infested fruit is a continual source of infestation to these groves. The Mexican Government realizes this danger and cooperates in enforcing local control measures on the Mexican side of the river. However, since the fly is present practically throughout the fruit-growing areas and feeds upon a wide range of fruits, to prohibit the shipment of its known hosts from the known infested sections would deprive the local markets of practically all fruit.

There have been a number of sporadic infestations of this fly in the Texas groves since it was first known to have crossed the Rio Grande in 1927. As a result of the methodical examination of the bearing groves by inspectors of the Department of Agriculture, these infestations have been discovered in their incipient stages. Processing and destroying the fruit in the infested groves, followed by spraying the trees immediately upon the discovery of an infestation, has proved effective and thus far has prevented the fly from becoming established here. Because of these protective measures the citrus industry in the valley has grown in the face of a continued threat of reinfestation from across the river. By a system of shipment under permit, based on the inspection of the groves, the channels of commerce have been kept open to the products of the valley orchards with no danger to the other fruit-growing sections of the country. Without this protection the industry would have been strangled through loss of damaged fruit and adverse quarantines.

Traps and Attractants Used

Approximately 7 million of the 8½ million citrus trees growing in the lower Rio Grande Valley have been planted within the last 7 years. With a million additional trees coming into bearing each year over which it was necessary to maintain supervision, it was found that sufficient time could not be devoted to the individual groves to determine accurately the presence or absence of an infestation. It was imperative, therefore, to develop some mechanical means of detecting infestations to supplement the manual inspection of fruit in the groves and packing houses. Traps and attractants were tried. A glass bell-type trap with fermenting malt as the attractant proved more effective than manual inspections during the fiscal year 1934. since in the majority of groves in which flies were trapped intense manual inspections failed to reveal larvae in the fruit. The difficulty in the use of traps lay in the impossibility of covering all groves continuously. Traps were accordingly operated in the more susceptible groves while manual inspections were continued in those less likely to harbor an infestation.

While the Mexican fruit fly has thus far been prevented from obtaining a firm foothold north of the Rio Grande, its continued repulsion depends upon constant vigilance.

P. A. Hoidale, Bureau of Entomology and Plant Quarantine.

ILK Sugar Produces More Rapid Growth in Young Animals Than Cane Sugar

Feeding a ration containing milk sugar to young laboratory animals causes them to grow more rapidly than others fed on a ra-

tion containing cane sugar. This greater rate of growth is due to the production of muscle and bones, not to the accumulation of fat. Adult laboratory animals, however, become heavier on a cane-sugar ration than on a milk-sugar ration, but the excess weight consists of fat. Laboratory animals, in general, live longer on a ration containing milk sugar than on one containing cane sugar.

These are conclusions derived from feeding experiments with rats carried out by the Bureau of Dairy Industry in the past few years. Similar results on growth of pigs have been obtained by workers in

the Bureau of Animal Industry.

Although pediatricians and nutrition workers in general have realized for a long time that milk sugar differs from the other common dietary sugars in several rather striking characteristics, there has been much doubt as to what advantages, if any, milk sugar might have over other sugars from the nutritional standpoint. In fact, many pediatricians have for some years advocated the use of maltose and glucose instead of milk sugar in prepared rations for babies because of the more rapid and complete utilization of these sugars and because of the claim that there is likelihood of digestive disturbance when milk sugar is used. This claim has recently been shown to be unwarranted. Another recent investigation led to the conclusion that age weight for age weight, the lactose-fed infant possesses more living tissue than does the infant fed on vegetable sugar.

Experiments with Rats and Pigs

It was to obtain confirmatory and additional information on the nutritional effects of milk sugar, not only on young animals, but also on adult animals, that feeding experiments were conducted at the Beltsville laboratories of the Department of Agriculture. Since it was necessary to make post-mortem analyses of the whole bodies of the

experimental subjects, rats and pigs were used.

In a representative series of experiments, balanced rations were used containing 63.5 percent of carbohydrate. Ration 1 contained 63.5 percent of dextrin; ration 2, 33.5 percent of dextrin plus 30 percent of milk sugar; ration 3, 3.5 percent of dextrin plus 30 percent of cane sugar. Groups of three rats of the same sex, age, and weight, were fed the three rations, each rat being on a different ration, and rates of growth were compared. Several sets were killed and analyzed at various stages of the experiment and the others were continued on their respective rations until they died naturally.

Regardless of whether the young rats on the milk-sugar and on the cane-sugar rations ate all they wanted or were limited to equal quantities of their food, those fed the milk-sugar ration grew faster than their partners on the cane sugar. But, after reaching what may be called adult age, the rats fed cane sugar became heavier than their partners fed milk sugar. Analyses of several adult rats showed that this difference in adult weight was due practically entirely to a difference in quantity of fat. Of the rats allowed to live until death occurred naturally, the milk-sugar fed rats survived longer than their cane-

sugar fed partners. Post-mortem examinations did not reveal any consistent cause of death for the rats on either ration. The effects of dextrin fed as the sole carbohydrate of the ration paralleled those obtained when cane sugar was substituted for part of it.

The fat percentages of the carcasses of hogs that had been fed a cane-sugar ration were considerably greater than those of hogs fed a milk-sugar ration. It was also observed that the flesh of the hogs on the cane-sugar ration was softer than that of the other hogs.

It is unsafe to claim that results identical with those obtained on animals would be obtained in experiments with human subjects, but it is probably true that somewhat similar differences in physiological effects would be found.

E. O. WHITTIER, Bureau of Dairy Industry.

INNESOTA Land-Use Planning Study Points Way to State Action

A study of land-use planning in northern Minnesota, was completed last year by the Division of Land Economics of the Bureau of Agri-

cultural Economics in cooperation with the division of agricultural economics of the University of Minnesota. Results of the study were published by the University of Minnesota Press in a book entitled, "Lands of Northern Minnesota; Their Use and Problems of Adjustment."

The major purpose was to define a program of adjustments for a large segment of the State including 14 of the northeastern counties.⁴ Problems were attacked from a regional point of view, emphasis being placed upon the development of plans of action rather than upon the

exploration of problems and causal relationships.

In the settlement of the cut-over lands of the State many mistakes were made. Lands too poor for farming were settled indiscriminately. Costly drainage projects were undertaken to reclaim vast areas of peat lands that subsequently proved too poor to support farm families. Roads were built and school facilities were developed in the vain hope of a dense population. Interest charges on the bonded debt, and the costs of providing simple functions of government for a scattered

population, proved too heavy to carry.

Tax delinquency started as early as 1921. As collections decreased, levies and assessments were repeatedly raised in unsuccessful attempts to provide adequate revenues. The increased assessments and levies accentuated the amounts of tax delinquency. A system of tax abatements or "bargain settlements" was introduced as a means of returning delinquent lands to tax lists and raising revenue. Some money was collected from bargain settlements but the system induced rather wide-spread voluntary delinquency. Several counties have as much as 85 percent of the land area delinquent for general-property taxes. The State has assisted several counties with the interest on and principal payments of their bonds in order to avoid default.

Under existing law, 8 million acres or more will revert to the State in 1935 for the nonpayment of taxes. The problems facing the State are (1) how to manage this huge newly acquired domain, and (2) how to put units of local government back on a self-sufficing basis.

⁴ Aitkin, Beltrami, Cass, Carlton, Cook, Crow Wing, Clearwater, Hubbard, Itasca, Koochiching, Lake, Lake of the Woods, Pine, and St. Louis.

Land Classification of 14 Counties

To assist in answering the first question, a tentative land classification of the 14 counties was made. All lands were placed in 1 of 2 zones, agricultural or conservation, depending upon soils, degree of stoniness, location, present use, and other factors. Suggested zoning legislation was drafted as a means of dedicating lands to the most appropriate uses. It was recommended that all land in conservation zones which reverts to the State be turned over to the conservation commission for management as forests, game refuges, etc., and that lands in agricultural zones which are suitable for farming and which revert to the State be sold and the proceeds divided among the various local taxing units to be used for the retirement of bonded indebtedness.

The problems of private and public ownership of forest lands were examined, and a suggested ownership and management program was outlined. Attention was given to methods of improved farm management, and problems involved in giving farm families an opportunity to relocate on better land were considered. Farm-record data indicated that it was impracticable immediately to clear wild land covered with green timber for new farms, and that even with delayed clearing the settler would have to accept a very low hourly wage if his farm development was to be financially successful. Budgetary analysis indicated that settler relocation would be feasible provided easily cleared lands were used where a settler could erect farm buildings and clear about 40 acres of crop land in 2 or 3 years, assuming a total mortgage indebtedness of not to exceed \$2,500.

On problems of local government, estimates of possible savings arising from the relocation of settlement were made. A detailed financial study of units of local government was undertaken to determine possible savings by transferring functions to larger units and by consolidation of units. Estimated savings arising from the transfer of functions from townships to counties would approximate \$199,100 annually for the 14 counties. School reorganizations would save \$175,600 annually and county reorganizations \$92,100 annually. By concentrating settlement in agricultural zones an additional \$507.700 could be saved from the above sources, making a total estimated saving of about \$974,500 annually. There are in the 14 counties about 5,000 families living in the suggested conservation zones. If these families could be relocated, savings in costs of local government would amount to about \$100 per family per year. Under such a reorganization, the standards of roads, schools, and other services could be raised substantially.

The estimated savings in government costs alone would not put local units on a self-supporting basis, but they would be of material help.

R. I. Nowell, Bureau of Agricultural Economics.

OSQUITO-CONTROL Work Under C. W. A. Project Brings Many Benefits

Upon the establishment of the Civil Works Administration the need of selecting useful lines of employment for those

out of work was at once apparent. The main objective was to put the unemployed to work quickly and to keep them usefully employed dur-

ing the winter of 1933-34. Therefore, it was desirable to use a large proportion of the funds for the employment of men and as little as possible for machines and materials. The relief of human distress by providing productive labor was the important thing, and this was

kept in mind.

Mosquito control appeared to lend itself admirably to the needs of the situation. Accordingly, two Federal projects were approved, one on malaria control under the auspices of the United States Public Health Service with L. L. Williams, Jr., as director, the other on pest mosquito control under the direction of the Bureau of Entomology. The former project was carried on in 14 Southern States where malaria is a serious problem, and the latter in 32 States and the District of Columbia.

Mosquitoes are serious pests in parts of every State of the Union. Since they breed extensively in stagnant water, they are most trouble-some in areas of considerable rainfall and along the coast where extensive salt marshes exist. They are also very troublesome, however, in the irrigated sections of the West and along rivers which at times overflow and flood considerable areas, thus creating numerous pools

in the bottom lands when the flood waters subside.

Not only are mosquitoes responsible for the transmission of malaria and yellow fever, but they carry fowl pox, certain parasitic worms, dengue fever, and brain fever of horses. In addition to the part mosquitoes play in the transmission of this formidable array of diseases, they are also of great economic importance as annoyers of man, livestock, and wildlife. Considerable numbers of livestock have even been killed by the attack of hordes of mosquitoes.

In many areas mosquitoes are so abundant as to interfere with farm operations and to retard milk flow and torment all classes of livestock. The development of many areas for industrial and resort purposes has been held back by mosquito abundance. Thus there is every reason to make serious efforts toward the betterment of these conditions.

All mosquitoes require water for their development. Usually the water in which they breed is stagnant, or at least quiet and free from insect-eating minnows. This suggests at once the need of eliminating stagnant pools and of allowing fish to enter freely into all parts of ponds, lakes, and marshes. This is accomplished by several methods, such as the construction of dikes to raise the water level, the cutting of ditches to drain the stagnant pools or to permit the free ebb and flow of the tide, the straightening and deepening of the edges of streams and lakes, and the clearing of brush from overflowed areas and along streams.

Elimination of Breeding Places Gives Best Results

The elimination of mosquito-breeding places gives much more lasting benefits than does the use of oils, etc., for the destruction of the mosquito larvae. However, work of this type cannot be regarded as

permanent, and provision for maintenance must be made.

In organizing the C. W. A. project for pest mosquito control, the Bureau of Entomology first selected a competent director in each State where the work was to be undertaken. The State entomologist was in most cases chosen for this position, his services being contributed by the State. An assistant State director and several supervisors and foremen, the number depending upon the number of men

employed, completed the supervisory force. Most of the supervisors and foremen, as well as the laborers, were chosen from the lists of the unemployed or from the relief rolls. As far as possible, the supervisory positions were filled by men with experience in this or related work. The importance of having properly trained men to direct the work became very apparent as the work progressed. The C. W. A. organization in the various States attended to the purchasing of tools and equipment and the assignment of laborers to the various subprojects as requested and handled all disbursements.

Unfortunately from the standpoint of efficiency, the work had to be started without delay, and thus there was little opportunity to make surveys much in advance. Furthermore, since the project was begun in the winter, when mosquito breeding was not going on, it was difficult to lay out the work to the best advantage. The severe winter in the Northeastern States was also a handicap, although the open win-



FIGURE 46.—Main drainage ditch through sandy soil, Cat Island, Miss., dug by C. W. A. workers as a mosquito-control measure.

ter in the Central and Western States was advantageous. The great demand for tools for the many projects requiring them made their procurement very slow and difficult. For the most part, tools and special equipment, such as rubber boots, were furnished by the Government.

The project was approved on November 28, 1933, and terminated on February 15, 1934. On December 14, 2,064 men were at work, and the number rapidly increased until a maximum of 21,817 were under

employment on February 2, 1934.

The physical results of this project may be briefly summed up as follows: More than 1,930 miles of ditches were dug (fig. 46). About 400 miles of stream banks were cleared, deepened, and straightened (fig. 47). Dikes to the extent of 53,020 feet were thrown up. Metal and concrete culverts to the extent of 7,566 feet were put in, and about half as much more was reset or repaired. About 50 tide gates were installed. In dredging, filling, and excavating, about 400,000

cubic yards of dirt and rock were moved. Brushy areas totaling approximately 7,600 acres were cleared, and approximately 11,000 feet of tile drains were installed.

Indirect Benefits Realized

In addition to these accomplishments a number of other indirect benefits resulted from this work. The morale of many communities that had suffered severely from the depression was noticeably improved. The men showed an active interest in the project and the



Figure 47.—C. W. A. workers clearing, straightening, and deepening stream through marsh at Westminster, Md., in carrying out mosquito-control project.

benefits that the community might derive from their labors. The work demonstrated to hundreds of communities how mosquitoes may be controlled and trained groups of men throughout the land in mosquito-control methods so that they may intelligently carry on such work in the future. The elimination of unsightly dumps and pools around towns and in cities was highly appreciated by the citizens and helped to increase their pride in their communities and to make them realize the possibilities of concerted effort along these lines.

Several States arranged to continue the mosquito-control work as State projects after the closing of the Federal activity, and in many places the work was continued under county or local auspices.

While the work was terminated too soon to complete all the subprojects, many reports showing marked reduction in mosquito abundance were received by the Department during the summer of 1934.

F. C. BISHOPP, Bureau of Entomology and Plant Quarantine.

ITROGEN Balance Sheet Shows Annual Deficit Requiring Replacement Some idea of the removal of fixed nitrogen from the soil by crops may be gained from the fact that the 889,702,000 bushels of wheat and

1,733,429,000 bushels of corn harvested in this country in 1930 contained over 1,400,000 tons of nitrogen. The total capacity of all the commercial plants in the United States for manufacturing fixed nitrogen artificially is less than 250,000 tons of nitrogen. In addition to the losses of fixed nitrogen through removal of crops, there are other losses due to leaching, surface washing, denitrification, etc.

Natural Nitrogen-Fixing Processes

Originally man was dependent solely on natural nitrogen-fixation processes for supplying to the soil the nitrogen compounds which were required by his crops. Electrical and possibly photochemical processes occurring in the air fix small amounts of atmospheric nitrogen. The compounds thus formed, together with the fixed nitrogen in floating bacteria, plant spores, dust of organic origin and ammonia, which has escaped into the air as a result of the disintegration of nitrogenous organic matter, are brought down by rain and snow to benefit the soil by the nitrogen so received. Also the soil is inhabited by free-living bacteria and other micro-organisms which, in their life processes, abstract nitrogen from the air and fix it in chemical combinations.

In addition, other soil bacteria have the power of entering the tissues of certain higher plants, such as the legumes, and fixing atmospheric nitrogen in cooperative relationship with them though they apparently do not fix nitrogen when living an independent existence. The gains in nitrogen as a result of these natural fixation processes are more or less balanced by various naturally occurring chemical and bacterio-chemical reactions which liberate both free nitrogen and ammonia so that the amount of fixed nitrogen actually present in an uncultivated fertile soil at any time is seldom, except in peat soils,

as high as 0.5 percent of the weight of the surface soil.

Experience has taught that, under most conditions, the continued growing of crops other than legumes upon a given soil, with the removal of these crops year by year, results in a continual decrease in crop yields, usually due to a decrease in the fixed nitrogen content of the soil since nitrogen is most often the limiting plant-food element in soils. Through experience it was also learned that the supply of fixed nitrogen to soils by natural fixation processes might be supplemented by the addition of natural manure and other waste nitrogenous materials of vegetable and animal origin. Finally knowledge was acquired that inorganic-nitrogen compounds were also efficient sources of plant-food nitrogen. As a result of this knowledge came the utilization for fertilizer purposes of natural accumulations of nitrates and, later of ammonium sulphate, a byproduct of the coking of coal, the metamorphosed remains of prehistoric plants.

Artificial Nitrogen-Fixing Processes

Enlarging requirements for fixed-nitrogen supplies finally led to efforts to bring about the artificial fixation of atmospheric nitrogen. The first commercially successful process for doing this, known as the electric-arc process, was attained in 1904 through imitation of the natural fixation by electrical discharges. Shortly afterwards, the cyanamide process, in which lime is caused to react with coke to form calcium carbide and this product in turn reacts with nitrogen to produce calcium cyanamide, was introduced. Finally in 1913 came the synthetic-ammonia process, in which nitrogen is combined directly with hydrogen to form ammonia. Although the newest of the nitrogen-fixation processes, this has outstripped the other two in importance and is, in fact, the only method commercially used in the United States. Although natural nitrogen-fixation processes will always remain the principal source of soil nitrogen, the natural supply may now be supplemented by products derived from these artificial processes to any extent which proves profitable.

Fixed-Nitrogen Losses

An estimated balance sheet for the nitrogen of our soils, such data as are available, is as follows: Annual loss, 60 pounds per acre, 300,000,000 acres	Short tons
Annual gain from— Manure of domestic animals Atmospheric precipitation Free-living micro-organisms Legumes Applied fertilizers	1, 000, 000 1, 000, 000 1, 750, 000
TotalNet annual loss	
Total	9, 000, 000

Although such a balance sheet is a rough approximation only, it nevertheless portrays the enormous annual loss of nitrogen.

Methods for Meeting Losses

The large annual deficit in the balance sheet may be reduced to some extent by better control of the losses that are due to leaching and surface washing or erosion. Good methods of tillage can conserve the moisture of the soil and keep the soil in suitable condition for bacterial activity. Cover crops particularly may be grown to prevent erosion.

In regions where soil conditions, rainfall, etc., permit the growing of legumes, these crops may be used to return to the soil a part of the nitrogen removed by other crops and in some localities possibly all the nitrogen required may be supplied by such means. Adverse soil conditions may largely eliminate the legume-bacteria population from the soil and when a new legume crop is introduced it may be necessary to bring in the proper bacteria also. By the isolation and selection of high nitrogen-fixing strains which can be propagated and maintained in pure culture, by the utilization of lime, phosphates, and other fertilizers for the correction of conditions detrimental to these organisms, and by the selection of suitable species or varieties of plants the efficiency of legumes as fixers of nitrogen has been greatly improved.

The elimination of waste in the handling of crop residues and animal manures and the return of these to the soils is highly important because not only is nitrogen thus conserved but a supply of organic matter as

humus to promote bacterial activity is also maintained.

The final inevitable deficit must be met by an intelligent use of nitrogenous commercial fertilizers.

ALBERT R. MERZ, Bureau of Chemistry and Soils. LEWIS T. LEONARD, Bureau of Plant Industry.

PARLATORIA Date Scale Nears Extermination in Cooperative Campaign

When several varieties of date palms were brought into this country 30 to 40 years ago in an effort to find some that were adapted to the desert areas

of the Southwestern States, a scale insect, the Parlatoria date scale, was accidentally introduced. This insect thrived in its new environment, and it was soon evident that dates could not be grown with profit unless an economical method of controlling the scale were devised.

After considerable experimental work, it was found that control, that is, keeping the insect down to such numbers that the production of marketable fruit is possible, would be very expensive, probably prohibitive in cost. Several facts supported this conclusion. The scale, which breeds on the foliage and fruit, is also found on the broad leaf bases, which are protected from spray or gas by several bands of fiber. Scales in such situations would be a constant source of reinfestation, even though those on the exposed parts of the palm might be checked. Thousands of seedling date and other varieties of palms, hosts of the Parlatoria date scale, are used for ornamental purposes in the date-growing areas and would also serve as centers of reinfestation.

Eradication of the pest was then considered, and it was decided that the complete elimination of the insect was feasible. The hope of success was based on the belief that by careful inspection palms lightly infested with scale could be located and the scale eliminated before the infestation spread to other palms. A campaign with that in view was initiated in 1921 under a Federal appropriation for the purpose. The infestation proved to be much more persistent and difficult to handle than was anticipated. In 1928 the work was reorganized on a cooperative basis, with an increased Federal appropriation and with the California Department of Agriculture and the office of the State entomolo-

gist of Arizona actively participating with the date growers.

In order to prevent the mechanical spread of the scale, no date palms or offshoots have been allowed to be moved out of the known infested areas, and shipments within those areas have been permitted only after inspection indicated that the plants were free from scale. The heavy infestations have been located by scouting inspection over the entire date-growing area, and the light infestations detected by frequent, intensive inspections in the surrounding areas of possible spread.

As the Parlatoria date scale is a very small insect, about oneeighteenth of an inch long, careful scrutiny is necessary to locate light infestations. The small palms can be inspected from the ground, but to reach the fronds of the larger palms step ladders from 10 to 20 feet high are used. Garden palms too tall for inspection from a 20-foot ladder are examined from a tower mounted on a truck (fig. 48), and for tall palms in door-yards or other places not accessible by truck extension ladders are employed. Infested palms are treated by removing all the foliage, cutting the fronds back close to the fiber, except those growing directly from the bud at the top of the trunk, which are cut back until they are about a foot in length. The surface is then scorched with a torch or sprayed with oil emulsion. Where the scale is below the fiber, it is necessary to remove the fiber and cut the leaf bases off near the trunk. This



FIGURE 48.—Truck and tower for inspection of tall date palms for presence of the Parlatoria date scale.

process causes the total loss of fruit for 2 years, and the third year a crop about one-half the normal size is produced.

As a result of scouting inspection thousands of seedling date palms of no value, many infested with scale and all difficult to inspect, have been found in the desert brush or along irrigation ditches. Some of these palms have been dug out and destroyed, while others have been pruned so that they can be properly inspected.

The campaign as conducted under the cooperative agreement has been in operation since 1928, and steady progress has been made. During the fiscal year 1929, 1,591 infested palms were found on 99 properties; in the fiscal year 1930, 621 infested palms were found on 65 properties; in 1931, 231 infested palms on 31 properties; in 1932, 59 infested palms on 13 properties; in 1933, 8 infested palms on 5 properties; and in 1934, 11 infested palms on 1 property. Since 1930 the area in which intensive operations have been carried on has

been gradually reduced. Only one garden is now (1934) considered an active infestation.

B. L. Boyden, Bureau of Entomology and Plant Quarantine.

PASTURES That Are Well Managed Serve as Means of Drought Insurance

In times of drought the value of pastures and range is impressed upon farmers, ranchers, and others concerned in livestock production. Al-

though a drought may begin during the winter, its effects are not keenly felt until the pastures dry up the following summer. Cattle sold under such unfavorable conditions have a low value for meat. If the drought is widespread, the demand for stockers and feeders is correspondingly reduced and the financial loss is thereby pyramided.

The economy of pasturage as a source of feed is doubly evident when it becomes necessary to purchase substitute feed during the grazing season. This is often necessary to maintain breeding and work stock and to keep milk cows from falling off in milk production. Under ordinary conditions, wintering livestock on harvested feeds for from 4 to 6 months costs from 2 to 4 times as much as grazing them during the remainder of the season. Accordingly, shortening the grazing season even 1 month may wipe out the possibility of profits in animal production. Prolonged droughts such as that of 1934 seriously injure and may even wipe out herds and flocks entirely, leaving effects that are felt for years. Such facts, resulting from observations and experiments, point definitely toward the need of a reserve of feed suitable for grazing.



FIGURE 49.—Western ranges are improved by allowing the grass to mature occasionally. Such grass cures well on account of the light rainfall and supplies a reserve feed.

When there is more pasturage for livestock at the beginning of the season than they can use, it may be fenced off and used for hay or silage. Oftentimes pastures are better the following year as a result of this practice. Another method is to leave the growth undisturbed for use as winter pasture (fig. 49). Such a pasture has a value much above that of the actual feed obtained because it provides a place for breeding herds and work stock to exercise in the winter when meadows or other fields are not suitable. The feeding of roughage on the thick sod of a winter pasture saves labor in feeding and in hauling manure and keeps the stock out of the mud during wet weather. When the soil is frozen or dry, such feeding may be done on thin or bare spots to improve their productiveness. Reserve pastures from which livestock are excluded throughout a grazing season are helpful in reducing parasitic infection and the spreading of disease.

Root Reserves and Reseeding

In the case of western ranges, root reserves and reseeding play an important part in increasing productivity. Through saving part of the range for drought insurance, an opportunity is afforded for seed heads to form. This unrestricted growth of the plant above ground makes possible a corresponding growth below ground. The greater root system makes more water available for the growth of the plants.

The reserve of feed is correspondingly increased.

The exclusion of grazing animals from a part of the range each year is necessary to give the plants near watering places, which are commonly overgrazed, a chance to come back. This practice not only provides a reserve and increases the gross production but results also in a better quality of feed. On good range the more valuable grazing plants, which would otherwise be killed out by continuous overgrazing, are given an opportunity to maintain themselves. Even on depleted range, grazing plants will eventually reestablish themselves if livestock are excluded.

There is still another great advantage in having reserve grazing for drought insurance. Where land has any appreciable slope and is

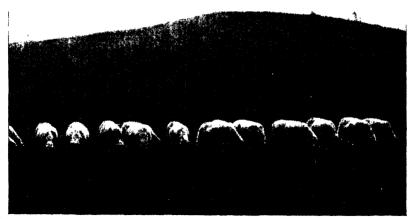


FIGURE 50.—Closely grazed green grass is rich in proteins, minerals, and vitamins. It is also highly digestible and is therefore an excellent substitute for grain as well as roughage in feeding livestock for productive purposes.

subject to erosion, the greater the growth of grass the less erosion occurs. On overgrazed land erosion may take place as fast or faster than on cultivated soil, because loose soil absorbs water more rapidly than bare, compact soil. Keeping a good cover of grass on such land prevents practically all loss of topsoil, whereas if the field is left bare erosion may cause the rapid loss of the productive topsoil.

Immature Grass Rich in Proteins

In reserving part of the pasture in humid areas it is possible to graze the remainder in such a way that extensive production of seed heads is prevented and the maximum quantity of highly nutritious feed is obtained. Although greater gross production of dry matter

may be obtained by allowing much of the grass to mature before it is eaten, as much or more digestible nutrients are commonly obtained from closely grazed pastures. The immature grass is comparatively rich in protein and phosphorus and is as digestible as most concentrates, whereas mature grass is considerably lower in protein and phosphorus, higher in crude fiber, and considerably harder to digest (fig. 50). Accordingly it is possible to build up a reserve of feed which may be cut for hay or grazed as an emergency measure, and at the same time to have the stock on more nutritious feed than if they had access to the whole pasture area. In general such reserves of mature grass are valuable principally for maintenance when they constitute the only feed. In maintaining more pasturage than the herds and flocks need under normal conditions, and building up a reserve of hay or grass silage, the farmer can thereby provide the cheapest form of harvested feed, and in the case of silage the most indestructible form for reserve feed. Such feed reserves tend toward more balanced, uniform, and profitable production over a period of years which may include severe droughts.

A. T. Semple, Bureau of Animal Industry.

PEAR Production Increased by Maintaining Adequate Soil Moisture

The maintenance of an adequate supply of soil moisture is recognized as one of the most fundamental factors in successful fruit farming, but

there has been some question as to what constitutes a sufficient soil-moisture supply for different fruits, or for the same fruits in different environments. With the object of determining the soil-moisture needs of pear trees growing in heavy soil, irrigation experiments have been conducted at Medford, Oreg., by the Bureau of Agricultural Engineering for 5 years and by the Bureau of Plant Industry for 3 years.

Frequent Irrigation Decreases Production Cost

Increased yield, secured through maintenance of highly available soil moisture resulted in a decreased production cost per box. (By available soil moisture is meant the moisture available for plant use.) The heavier orchard operation costs such as pruning, spraying, orchard heating, etc., are not materially affected by yield variations in mature trees, but the cost per box of packed fruit is naturally less as yield per tree is increased. It has been found that production costs per packed box have been decreased as much as 40 percent by irrigating

frequently.

Yield is the product of number of fruits times average size. By increasing the bearing area the number of fruits per tree may be increased. Holding soil moisture highly available in all portions of the root zone results in increased vegetative growth and vigor. The Anjou pear tree usually blooms very heavily, as many as 33,000 blossoms per tree having been observed. This heavy blooming has a devitalizing effect upon the tree, and a large number of the buds that set fail to hold the fruit. This premature drop, commonly called the "June drop", is often excessive on heavily blooming trees, leaving a relatively light crop to be matured. Maintaining a highly available soil-moisture supply during the period of fruit-bud differentiation in June has

resulted in a reduction of the number of buds differentiated into fruit buds with a consequent bloom reduction the following spring. With fewer blossoms, however, fruit set and total yield have increased.

The degree of availability of soil moisture has a marked effect upon the rate of volume increase of pears on heavy soil. It has been found that the moisture content of the major portion of the root zone should be maintained at not less than 80 percent of the available capacity if maximum fruit volume is to be obtained. Allowing any material portion of the root zone to decrease below 50 percent of the maximum available soil moisture has resulted in materially lessening fruit growth and, consequently, in lower yield. These results apply only to heavy, adobe clay soil such as that which forms the major portion of the pear acreage near Medford, Oreg. Results by other workers on lighter soils indicate that such soils may become relatively much drier before

decreased fruit growth occurs.

Rate of fruit-volume increase is not constant throughout the growing season. As the fruit enters the period beginning about 40 days prior to harvest its daily rate of growth increases, and in this 40-day period as much or more volume increase is made as during the 70- or 80-day period prior to the last growth spurt. It has, therefore, been found especially important to maintain highly available soil moisture during this 40-day period before harvesting. The Oregon results show that if there is sufficient residual moisture in the soil from winter and spring rains to carry the trees and fruit through the early summer without undue stress, storage water should be conserved and applied during the period when it will give maximum benefit in increasing fruit size. Maintaining highly available soil moisture by frequent irrigation during the early growth period of the fruit only and then, by withholding irrigation, allowing soil moisture to decline to a low point of availability at or prior to harvesting has resulted in a greatly decreased yield.

In those pear varieties, such as Bartlett, that usually require thinning in order to bring the crop to marketable size it has been determined that the maintenance of highly available soil moisture increases the efficiency of the leaves, and that fewer leaves per fruit are required to manufacture plant foods. By increasing leaf efficiency more pears per tree will reach marketable size, and yield will be increased.

Importance of Roots

A positive correlation has been found between the observed density of small, visible roots and the rate of soil-moisture extraction. It has been determined for mature Anjou and Bartlett trees rooted in heavy clay soil not over 6 feet deep, that of the roots in the top 4 feet approximately 34 percent of the feeder roots are located in the upper foot of soil below the mulch, 28 percent in the second foot, and 22 percent in the third foot, a total of approximately 84 percent thus being in the upper 3 feet. Comparatively few roots extend beyond a depth of 4 feet hence if the soil-moisture content of the upper 3 feet is carefully regulated the lower rooting levels will not require much attention. At each irrigation, however, sufficient water should be added to bring the entire root zone to field capacity.

The concentration of feeder roots per cubic foot of soil is about uniform throughout the zone having inner and outer radii of 6 and 14 feet, respectively, from the trunk. On either side of that zone the

root concentration decreases slightly. This indicates that in mature pear orchards the entire soil surface should be wetted at each irrigation.

It appears that immediately subsequent to irrigation each extracting root hair may be in contact with a water film. As the roots extract moisture and the films retreat the root hair must project itself into a new moisture-extracting position or water must move to the root. It is inconceivable that roots should come in contact with each particle of soil and its enveloping water film. In fact, it is known from observation that throughout the rooting space there are areas in which no roots are visible. Therefore, it is felt that some water movement to roots must occur. Because this heavy soil is only slightly pervious the rate of moisture movement within certain limits seems slower than the ability of the roots to absorb water when it is freely available. As the water films retreat from the absorbing root surfaces an envelop of dry soil may be left around each root hair. The moisture content of this dry soil envelop may be at or very near the permanent wilting percentage while the moisture content of the soil a very short distance from the root may still be highly available but moving to the root at a very slow rate. As an increasing number of root hairs lose contact with the receding water films and the dry soil envelops become more extended, it probably becomes increasingly difficult for the roots to secure sufficient water from the soil to satisfy plant needs. seems particularly the case during hot weather and during periods of maximum vegetative and fruit growth.

Since soil-moisture content, determined with our present technic, is the average moisture content within and without these dry soil envelops, the indicated soil moisture may be actually higher than that

immediately in contact with the root hairs.

Soil moisture in cropped land is never static. The forces of gravity, surface tension, and suction pull by roots are continually at work distributing and readjusting moisture in the soil. The Oregon irrigation experiments show that soil-moisture conditions may be profitably controlled.

R. A. Work, Bureau of Agricultural Engineering.

PHONY Peach Disease Control is Promoted by Destroying Wild Peach Trees

Although the peach is not native to the United States, the climate and soil of the Southeastern States are so well adapted to its needs

that it became readily naturalized there at an early date. From the extensive home and commercial orchards that were planted, trees have escaped from cultivation and produced prolific numbers of "wild" seedlings. Today, in Georgia alone there are many millions of these wild seedlings, ranging from small bushes to old trees 30 feet or more in height, scattered throughout the State, and similar conditions exist over practically the entire region. Occasionally these seedlings are found on terraces, particularly in old, abandoned fields, and along fence rows. More commonly, however, they grow along the edges of woods, intermingled with elderberry, persimmon, alder, and sweetgum, and frequently almost smothered with honeysuckle. In such positions they are inconspicuous, and it is seldom that a landowner realizes their presence, even if he is an orchard owner. Yet these wild peach trees constitute a serious menace to the successful

operation of a commercial peach orchard, because they are liable to attack by all the insects and diseases that attack cultivated peaches and serve as a reservoir of infestation and infection for the commercial

orchards, no matter how well these are cared for.

Within 2 years after the commencement of the campaign to eradicate the phony peach disease, it was found that numerous orchards that had been thoroughly cleaned up were being reinfected from some outside source. Surveys and careful scouting around such plantings brought to light the presence of infected wild peach trees growing near the orchards, and it was evident that the disease could not be controlled permanently in the orchards unless it was also controlled in its wild hosts.

First discovered during the nineties, the phony peach disease has already caused tremendous losses to growers in central Georgia. Prior to the commencement of the eradication campaign, in 1929, it had become so prevalent in many orchards as to bring about the abandonment or destruction of over a million trees and had forced several growers into bankruptcy. The disease has not restricted its ravages to one locality, however, but has been steadily spreading and increasing in importance, until it now occurs in 13 States. It may prove to be as serious throughout the country as it has already shown itself to be in central Georgia.

Thus the future of the peach industry of the country might well depend on the control of the phony disease in wild peach trees. An annual inspection of these millions of seedlings was an obvious impossibility. The trees were worthless, even when not harmful, and the obvious thing to do was to destroy them outright, but this could be done only by means of large forces of laborers. No appreciable good effect could be anticipated with the inspection force available for

the work

When the situation appeared most hopeless, the Emergency Relief Administration set up an organization to furnish immediate work for thousands of the unemployed. Among other Federal projects, they authorized one for the eradication of wild peach trees in Georgia and Alabama, where the phony peach disease is seriously prevalent, and where there are large commercial plantings or important peach-grow-

ing nurseries.

In Georgia the Civil Works Administration furnished a force of 948 men, who worked in 42 counties. In Alabama 111 men were employed, and work was carried on in 3 counties. The projects were set up shortly after the middle of December and continued through February 15, at which time the Federal projects terminated. Beginning on February 16, State projects were set up, furnishing 448 men in 12 counties in Georgia and 61 men in 3 counties in Alabama. Work ceased in both States on March 29.

Results of Campaign Satisfactory

These forces destroyed a total of 4,724,659 trees, 4,248,802 in Georgia and 475,857 in Alabama. While it was not expected that every wild tree could be found and destroyed in a single inspection, the results of this first campaign were very satisfactory. In a few counties the majority of the seedlings were eradicated, and in all of them a good proportion of the wild trees growing close to commercial orchards were removed. Because of the long incubation period of the

phony peach disease, the direct effect of this work on the spread of the disease will not be evident for 2 years. However, the destruction of the wild hosts must be of direct benefit, since it removes a source of infection. Indirectly it has already assisted materially in the eradication campaign. With the majority of the seedlings gone in several counties, there is no longer any need to devote much time to them, and this time can now be given to commercial-orchard inspection, making it possible to cover many more orchards than could be handled formerly.

Although the purpose of the campaign was to control the phony disease, it has brought other benefits. All insects and diseases that attack a crop add materially to the cost of producing that crop, and frequently are the deciding factor between a profit and a loss. The destruction of these wild peach trees, which harbor not only the phony disease but all the other enemies of the peach as well, should aid the growers in controlling all the pests that attack their crop and thus enable them to produce a better quality of fruit at some decrease in cost of operation.

The project received the hearty support of all concerned and is considered to have combined successfully immediate unemployment relief with permanent agricultural and community benefit.

W. F. TURNER, Bureau of Entomology and Plant Quarantine.

PHOSPHATE Blast Furnace is Nucleus for Balanced Fertilizer Trade in West

Were it not for their accessibility to sources of fertilizers, certain eastern and southern agricultural lands would be called marginal

more often than is now the case. These lands have long been served by the phosphate deposits of Florida and Tennessee; by the potash mines of Europe, and by the nitrate deposits of Chile, with products deliverable at many close-by ports by water transportation, and by coke ovens, widely distributed, which supply byproduct ammonia at low production and distribution costs. Hence soil fertility in these areas has long since become not a matter of nature but of soil management. It is not a coincidence that this area of relatively heavy fertilizer application is accessible to relatively low-cost supplies.

The term "heavy application" is used comparatively. The comparison is with the vaster areas of the West and Middle West, where at no time have fertilizer supplies been accessible except when imported from long distances at freight charges representing a disproportionate part of their cost. This cost is not necessarily prohibitive, for cost must be measured in terms of profits from use; but relatively fertilizers are high in the West and unquestionably their costs have been an effective deterrent to their more general use in that section.

Federal surveys have determined the location and extent of the fertilizer resources of the West. Considerable research has been conducted in the Fertilizer Technology Division of the Bureau of Chemistry and Soils to develop feasible methods for their commercial utilization—methods capable of employing locally available raw materials, and yielding high-grade products susceptible of low-cost distribution. Abundant supplies of raw materials have been found for the production of potash, phosphates, and nitrates, the essential ingredients of

commercial fertilizers; and substantial progress has been made in the

development of an appropriate technology.

Potash industries are now established in southern California and New Mexico. They produce with highly developed technology an excellent grade of potassium chloride. Despite their distance from the East, and the resulting high freight charges, they supplied in 1933 almost 40 percent of the potash used in the East. Abundant raw materials in addition are represented by the polyhalite deposits of Texas and New Mexico, the alunites of Utah, the leucitic larvas of Wyoming, and the natural brines of Nebraska and Utah.

Of phosphate rock there is a superabundance. The phosphate deposits of Idaho, Wyoming, Montana, and Utah represent the world's

greatest known phosphate reserves.

The great coal deposits of Wyoming, and the supplies of natural gas of that and other States, represent inexhaustible sources of basic raw materials for nitrate production from the air by the modern synthetic methods. Ammonia synthesis has freed the farmers of this country from exclusive dependence on foreign nitrate deposits, and brought close to the farm an inexhaustible supply at costs far below those formerly paid. But the great nitrate plants of the East, while at the door of the eastern farmer, are still far removed from the farms of the West.

Here are raw materials of such abundance, diversification, and distribution as to offer the potentialities for fertilizer manufacture ade-

quate to the all-time needs of western agriculture.

In their utilization there should be applied a technology representing the most recent developments in chemical engineering. These developments involve a radical departure from established processes. The three basic plant-food elements must be combined into high-analysis compounds to eliminate freight charges on useless ingredients, so as to make wide distribution possible. The operation must be profitable if private capital is to be employed. These are problems with which the

Department is now engaged.

As the American fertilizer trade is organized, the mixture sold is designed to supply the plant-food elements in which the average soil is apt to be deficient, and to which the growing plant makes most ready response. Without discounting the relative importance of any one plant food, emphasis has been placed in the past on phosphates. Many years of experience on a diversity of soils and crops has shown that a mixture is so much better than the separate ingredients used singly, that for the sale of one, supplies of the other two are essential. For a satisfactory fertilizer industry for the West, therefore, the production of all three elements is required. At present, potash produced in the West must seek its market in the East where supplies of phosphates and nitrates are abundant.

Blast-Furnace Smelting of Phosphate Rock

Accordingly, the Department has devoted special attention to phosphate production and has developed in its laboratories the technology of blast-furnace smelting of phosphate rock to yield agricultural phosphates. Because this process requires cheap coal as a fuel, a location has been sought where phosphate rock and coal are to be found close together. One location is the Green River section of Wyoming, which is within shipping radius of the phosphate deposits of both Wyoming

and Idaho. Close by are the leucitic lavas from which potash can be recovered by smelting; or potash can be delivered to this section from the mines of New Mexico or from California en route to the eastern market.

With the blast-furnace process now under large-scale demonstration in comparison with the electric-furnace method by the Tennessee Valley Authority at Muscle Shoals, Ala., the question of profitable operation will be answered. It appears to be the most feasible method of processing the western phosphates, and is designed specifically for that use

As a nucleus around which to build a well-balanced fertilizer industry, the phosphate blast furnace affords the basis of new activities that bid fair to become an essential part of the industrial and agricultural development of the Northwest which now seems certain as the result of current water-power and irrigation enterprises. Such an industry would assure to that vast area the many, enduring benefits represented by abundant supplies of low-cost plant food.

J. W. TURRENTINE, Bureau of Chemistry and Soils.

PHOSPHATE Fertilizer Prepared by Treating Phosphate Rock With Steam at High Temperatures

Domestic phosphate rock consists principally of fluorapatite, an insoluble compound which contains cal-

cium phosphate and fluorine. Recent laboratory studies have shown that when phosphate rock, containing about 5 to 10 percent of silica, is heated in the presence of water vapor at about 1,400° C., the fluorapatite is decomposed, upwards of 95 percent of the fluorine is volatilized and 80 percent or more of the phosphoric oxide (P₂O₅) is converted into the citrate-soluble (available) condition.

The results of experiments with Florida land-pebble phosphate rock show (fig. 51) that no increase in the citrate solubility of the phosphoric oxide occurs until about 63 percent of the total fluorine is volatilized. From that point, however, the citrate solubility of the phosphoric oxide increases with increase in the percentage of the total fluorine volatilized. Removal of only 30 to 60 percent of the fluorine causes the citrate solubility of the phosphoric oxide to decrease below that of the phosphoric oxide in the untreated rock.

The process seems to have possibilities for the production of cheap phosphate fertilizer. It can be carried out in direct-fired rotary kilns and is applicable to all of the regular commercial grades and types of

phosphate rock produced in this country at present.

Properties of Calcined Phosphate

Some of the properties of the product, which for convenience may be called calcined phosphate, are summarized briefly, as follows:

The product is obtained in the form of a sintered or semifused clinker which, unlike superphosphate, requires no aging and needs only to be ground to the desired fineness for fertilizer purposes. It is practically insoluble in pure water, is weakly alkaline in reaction, has no deleterious effect on fertilizer bags and machinery, and should prevent, to a considerable extent, the increase in soil acidity caused by the use of ammonium salts as fertilizers. Although the alkalinity of the mate-

rial is sufficient to cause some loss of ammonia from ammonium salts in fertilizer mixtures, it is believed that it will be possible to overcome

this disadvantage.

The properly prepared material should contain about 30 percent or more of citrate-soluble (available) phosphoric oxide, as compared with about 19 to 21 percent in the best grades of ordinary superphosphate. The chemical nature of the available phosphate in calcined phosphate

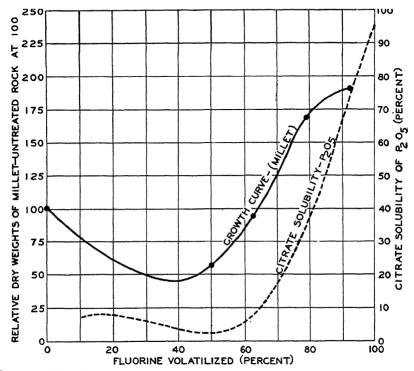


FIGURE 51.—Relation between volatilization of the fluorine from phosphate rock and the citrate solubility and nutrient value of the phosphoric oxide (P₂O₅). Until more than 60 to 65 percent of the fluorine is volatilized from phosphate rock by the calcination process the solubility of the phosphoric oxide in neutral ammonium citrate and the growth of millet are depressed below the results obtained with the raw phosphate rock. With greater removal of the fluorine both citrate solubility and plant growth are increased. (See fig. 52.)

is not definitely known but it is believed to be similar to that of the phosphate in basic slag, the phosphatic byproduct of the smelting of high-phosphorus iron ores, which is widely used as a fertilizer in Europe. Calcined phosphate not only is superior to superphosphate in physical properties but it markedly improves the physical properties of fertilizer mixtures in which it is present.

Because of its low fluorine content, calcined phosphate has possibilities as a substitute for bone meal in the preparation of mineral feeds for livestock. Also, the fluorine volatilized during the manufacturing process is a possible source of fluorine compounds for industrial and technical purposes and for use as insecticides.

Finally, the high citrate solubility of calcined phosphate indicates

that it should be an efficient fertilizer material.

Plant-Food Value of Calcined Phosphate

In order to determine the plant-food value of calcined phosphate, greenhouse pot experiments were carried out with millet as a test crop, using a phosphorus-deficient Norfolk loamy fine sand soil. In the preparation of the calcined phosphates used in these tests about 50 to 97 percent of the fluorine content of the phosphate rock was volatilized and the citrate solubility of the phosphoric oxide in the products ranged from about 7 to 86 percent. Tests were also made with ordinary superphosphate and dicalcium phosphate as standard sources of phosphoric oxide. The phosphates were applied in 4-12-6 fertilizer mixtures at the rate of 240 pounds of total phosphoric oxide

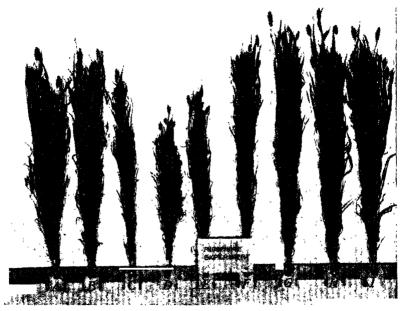


FIGURE 52.—Growth of millet with calcined phosphate. Phosphate treatment: 1, superphosphate, 2, dicalcium phosphate; 3, raw Florida pebble phosphate rock, 3.85 percent fluorine; 4, calcined phosphate, 2.08 percent fluorine; 5, calcined phosphate, 1.49 percent fluorine; 6, calcined phosphate, 0.85 percent fluorine; 7, calcined phosphate, 0.4 percent fluorine; 8, calcined phosphate, 0.1 percent fluorine. The percentages of fluorine removed from the phosphate rock in the preparation of the calcined phosphates were as follows: No. 4, 50; no. 5, 64; no. 6, 79; no. 7, 90; no. 8, 93; and no. 9, 97.

per acre, equivalent to 1 ton of the complete mixture per acre. The growth of millet resulting from the different treatments is shown in

figure 52.

Calcined phosphates from which only 50 to 64 percent of the fluorine had been removed (groups 4 and 5) gave smaller crop growths than did the untreated phosphate rock (group 3). With the removal of greater percentages of fluorine larger increases in growth were obtained (groups 6 to 9), and the calcined materials from which 90 to 97 percent of the fluorine had been removed (groups 7 to 9) gave better results than did ordinary superphosphate and dicalcium phosphate (groups 1 and 2).

As shown in figure 51, there is a more or less close correlation between the citrate solubility and the plant-food value of the phosphoric oxide in calcined phosphate, and both of these properties are correlated with the proportion of the fluorine removed during the manu-

facturing process.

Other greenhouse tests with millet and other crops substantiate the results presented here, in showing that the fertilizer value of calcined phosphate, with 90 percent or more of the fluorine removed, compares favorably with that of superphosphate and dicalcium phosphate.

K. D. JACOB, B. E. BROWN, and F. R. REID, Bureau of Chemistry and Soils.

ONDEROSA Wav—A Firebreak Between the Lowlands and the Higher Timbered Belt

On the long slopes rising gradually from the central valleys of California to the mountain summits on the

east, the United States Forest Service is completing a 650-mile firebreak, known as the Ponderosa Way, extending from Pit River on



FIGURE 53.—The Ponderosa Way, a firebreak between the lowlands and the timber on higher elevations.

the north to Kern River on the south. Seen from the air the Ponderosa Way is a wide strip cleared of all vegetation separating the belt of grassy woodland and chaparral of the low country from the timber on the higher elevations. In some places it follows the contour of the hills, in others it dips into the canyons and gulches (fig. 53).

The Ponderosa Way takes its name from a commercial timber tree, formerly called western yellow pine, which forms over 60 percent of the total stand of timber in California. Extensive in its range, ponderosa pine is the first commercial tree encountered as one climbs from the hot, dry lowlands to the higher country. Formerly it reached much further down into the valleys but lumbering and forest fires have now driven it back many miles.

Firebreaks are built to stop the front of an advancing fire, and are simply lanes cleared of all inflammable material. Their width depends upon various factors such as the height of the trees, shrubs, or other vegetation on either side and the slope of the ground. They have several uses as a fire-protection measure. When a forest fire is advancing slowly the break may stop it. At times they afford a way for transportation of fire fighters and equipment. Where the fire is running with such force that it threatens to leap the firebreak, then the break may be used for backfiring, a method of fighting fire with fire by burning the material on the ground so the main blaze will have nothing to feed on. Backfiring must always be done from a safe place such as the cleared line afforded by a firebreak.

Varying Width of the Firebreak

The width of the Ponderosa Way varies from 50 to 200 feet depending on the type of cover and the slope of the ground. On narrow

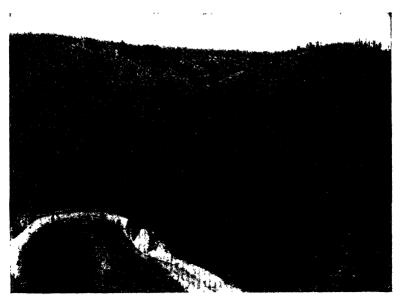


FIGURE 54.—A firebreak which may be used for the transportation of men and equipment.

ridges it is 50 feet wide, on broader ones 150 feet. On contours and in dangerous places it is 200 feet or more. In the center of the way is a strip about 20 feet wide cleared to mineral soil and graded where necessary to form a road or truck trail so that motor vehicles and tank trucks can travel over it. In places old existing roads are used for this central strip. On steep ground the truck trail is built separately but close to the Ponderosa Way so that as much of the way as possible will be accessible to motor transportation (fig. 54).

Twenty years ago similar firebreaks were built along the western boundaries of the Sierra and Sequoia National Forests in California. They proved their value many times as a defense against fires originating in the low country. The work done by the State labor camps in the winters of 1931 and 1932 under the direction of the California Division of Forestry revived the idea of protecting the timber belt by

a firebreak, and resulted in the Ponderosa Way project.

During the winter of 1933-34 about 24 C. C. C. camps, 10 N. I. R. A. or Public Works camps, and some C. W. A. labor cooperated to complete 75 percent of the Ponderosa Way. Six C. C. C. camps were working on the Ponderosa Way in the summer of 1934 and by the spring of 1935 the project should be complete.

Forest officers and the public believe that this is one of the most important measures vet undertaken for the protection of timber. watersheds, range lands, and recreation areas in the national forests

of California.

R. W. Ayers, Forest Service.

REDATORS and Rodents are Factors in the Spread of Disease That wild animals may be carriers of human diseases, notably bubonic plague, spotted fever, and rabies. has long been recognized by medical

Investigations during the past few years have added other diseases to the list, and now it is becoming more generally appreciated that wild animals play an important role in the health as well as the economic life of man. The Bureau of Biological Survey has done much to learn of the relationship of wild animals to man and to aid in dealing with outbreaks of various diseases by controlling the wild-animal hosts. These diseases have included tularemia, Rocky Mountain spotted fever, endemic typhus fever, rabies, and bubonic

plague.

Tularemia has been found to be transmitted, usually by insects, from infected rodents—principally wild rabbits—to man. One of the most recent of the outbreaks, which have been rather common throughout the West, occurred in Meagher County, Mont., late in April and early in May of 1934. Jack rabbits died in great numbers, and dead ground squirrels also were noted. Approximately 200 head of a band of sheep grazing in the area died before the cause was discovered to be tularemia. Investigation by specialists of the Public Health Service. the State board of health, and the Bureau of Biological Survey demonstrated that wood ticks, present in great numbers, were responsible for the transmission of the tularemia from the diseased rodents. sheep were sheared, dipped, and moved to another range, and the Biological Survey inaugurated a campaign to eliminate the rabbits and ground squirrels, labor and funds being supplied for the purpose by the State emergency relief administration.

Rocky Mountain spotted fever, long one of the dreaded diseases of the West, has been transmitted to humans by wood ticks, with rodents and other wild animals acting as intermediary hosts. Alarm has been felt by health authorities in the Eastern States because of the recent occurrence there of this disease, heretofore considered as a western malady only. Cases have been reported in Pennsylvania and Mary-

land. A few deaths occurred near the District of Columbia.

Endemic typhus fever, while less important as a cause of death than epidemic typhus, has for many years been a serious disabling disease in the South, and it increased at an alarming rate from 1931 to 1933. The State health departments of Alabama, Georgia, and Texas reported a total of 250 cases in 1931, 772 in 1932, and 1,747 in 1933. As the result of intensive investigations, at the bedside, in the field, and in the laboratory, medical officers of the United States Public Health Service found that this disease has an animal reservoir, chiefly in the common rat, and that under suitable conditions the disease is transmitted from rat to man by certain of the rat fleas. It had been previously shown by specialists of the Bureau of Entomology and Plant Quarantine and of the Baylor University College of Medicine that the tropical rat mite also is capable of transmitting this disease.

Rat-Control Project

With this knowledge and with an allotment of 10,000 workers by the Civil Works Administration the Biological Survey and the Public Health Service carried on an intensive rat-control joint project between December 1933 and March 31, 1934. A total of 747,608 separate premises were treated under the Biological Survey supervision in Texas, Alabama, and Georgia with more than 800,000 pounds of red-squill rat bait in addition to the use of 400,000 traps. It is estimated that not less than 7,500,000 rats were thus destroyed.

The number of typhus-fever cases had increased 300 percent in Alabama during 1932 and 1933, and again in 1934 up to the conclusion of the rat-control campaign. Had the same ratio been maintained there would have been 630 cases reported from the close of the campaign, in March, to July 1. Instead there were only 47 cases, or an indicated decrease of 93 percent. In Georgia and Texas a corresponding decrease also had taken place. The economic saving of produce and property in the 136 counties covered has been estimated to be approximately \$8,750,000.

Rabies Among Wild Animals

Rabies is frequently contracted by covotes and other predators, probably largely from dogs, and may thus be spread among other wild animals and to man. Outbreaks are difficult to control, and it is only through constant vigilance and the work of the expert force of trappers maintained by the Biological Survey that it has been possible to check them. One of the most serious outbreaks in several years occurred in southern Lea County, N. Mex., in February 1933, and within a month it had assumed alarming proportions. In one case, 18 of 22 sheep bitten by covotes showed symptoms of rabies and were killed by the owner. Several bulls held in a feed lot were attacked by a rabid coyote, but recovered after being given serum treatment. A milk cow at Mesquite, N. Mex., developed the disease, and an entire family that had been using its raw milk was given Pasteur treatment. One trapper bitten by a rabid coyote also received treatment, and another attacked by a coyote killed the animal before it could bite him. Bureau workers, in cooperation with local authorities, instituted a vigorous coyote-trapping and poisoning campaign, and within a few months the epizootic was stamped out. In Nevada about the same time the loss of 23 cattle from rabies in Paradise Valley led to prompt coyote-control measures that stamped out the disease and prevented further serious losses.

In August 1934 officials of the health and game departments of Maine urged that aid be given in controlling an outbreak of rabies near Farmington. The Biological Survey's expert learned that the trouble was localized in a largely wooded farming section, not over 8 miles in diameter, where 10 foxes with evidence of rabies had been killed since March. One boy, 3 cows, and 4 dogs were known to have been bitten by the foxes, and 2 of the cows had died. A rapid spread of the disease among the numerous large and small wild animals was threatened, but acting on the Bureau's recommendation the State game department immediately employed 10 trappers to remove the possible carriers from the locality. By October 1 these men had taken 162 foxes, 107 raccoons, 510 skunks, 117 porcupines, 9 minks, 67 woodchucks, and numerous squirrels, muskrats, weasels, and vagrant cats. This action brought the situation under control.

Bubonic Plague Among Ground Squirrels

Bubonic plague has long been prevalent among ground squirrels in California, but Federal and State health and agricultural officials have cooperated in controlling these rodents about resorts, camp grounds, and other places frequented by people, and the human cases have been exceptionally few. It has been definitely demonstrated in California that systematic, intensive rodent-control campaigns must be carried on each year if the health and welfare of the State are to be protected, and recent control work made possible by E. C. W. and P. W. A. allotments has thus been of great benefit.

Disease control, in addition to its importance to public health and man's economic interests, is part of wildlife management. Tularemia epizootics, for instance, have virtually wiped out cottontail rabbits over large areas, and muskrats, gray foxes, quail, and grouse have been affected with this disease, which has caused widespread alarm among hunters and trappers and reduced the sale of hunting licenses.

ALBERT M. DAY and J. E. SHILLINGER,
Bureau of Biological Survey.

RICE When Treated for Milling Acquires Desirable Qualities

The most valuable product obtained in the milling of rice is the whole kernels, or head rice. The medium- and shortgrain rice varieties are more extensively

grown in the United States, owing largely to a higher yield of head rice in milling, than the long- and long-slender-grain varieties. The better long- and long-slender-grain varieties are, however, quoted on the principal clean-rice markets at higher prices than the medium- and short-grain varieties. If the milling quality of the long- and long-slender-grain rices could be improved it should lead to a larger production and consumption of these types in the United States.

The Process

In certain rice-producing countries of the Far East some rough rice is treated prior to milling. It is claimed that the treated rice mills better, and that the milled rice has a more pleasing and distinctive taste, contains more vitamin B, keeps better, and is more nourishing

than untreated rice. The process consists in soaking rough rice in water, then steaming it under pressure. After steaming, the rice is dried and milled. The type or types of rice that are so treated in the Far East and the exact procedure followed are not generally known. It appears that the method of treatment varies more or less in different countries, but the effects of the treatment are essentially the same.

In experiments conducted by the writers on parboiling rough rice the long-grain varieties Fortuna, Rexoro, Edith, and Iola, the medium-grain variety Blue Rose, and the short-grain varieties Colusa and Caloro were used. These, with the exception of Iola, are important commercial varieties in the United States. Rexoro is a long-slender-grain variety of the same general type as the Patna rice from India. The more extensive tests were made with Fortuna and Rexoro.

The rough rice was first soaked in water, drained, and then steamed under pressure. The treated samples were thoroughly air-dried

before they were submitted for shelling tests.

Treated and untreated samples of each variety were sent to the Federal-State rice grading office at Crowley, La., for shelling tests. These were made with the Smith shelling device, which indicates the probable yield of head rice that may be obtained from a given lot of rice when milled.

Results of Experiments

For the samples of rough rice soaked for 24 hours at room temperature and steamed for 25 minutes the increase in the indicated yield of head rice ranged from 2.6 percent for Blue Rose to 25.5 percent for Rexoro; for Fortuna the increase was 9.8, for Iola 19.9, and for Edith 23.4 percent. The increases for Colusa and Caloro, steamed 45 minutes, were 19.1 and 28.0 percent, respectively.

In the more extensive experiments, samples of Fortuna and Rexoro were soaked at constant temperatures and steamed for different lengths of time. The increases in the indicated yields of head rice were essentially the same regardless of the length of the soaking period, the temperature of the water in which the rice was soaked, or the length of the steaming period. The color and texture of the treated rice were, however, affected by these factors.

The average increase in indicated yield of head rice for all Fortuna samples soaked at constant temperatures and steamed for different periods was 29.7 percent, and for all Rexoro samples 25.2 percent.

Color of Treated Rice

The treated rice obtained in these experiments when milled varied in color from translucent to amber, whereas untreated milled rice is white or more or less opaque. However, even though the treated milled rice is darker than the untreated, it is nearly as white when boiled.

Cooking Quality

Treated kernels when boiled retained their shape better than did untreated kernels of the same variety. When boiled and sterilized in water or canned soup the treated kernels retained their shape much better than did the untreated kernels of the same variety or those of Patna rice (fig. 55). A considerable quantity of Patna rice grown in India is imported duty free each year largely for use in commercially canned soups. In

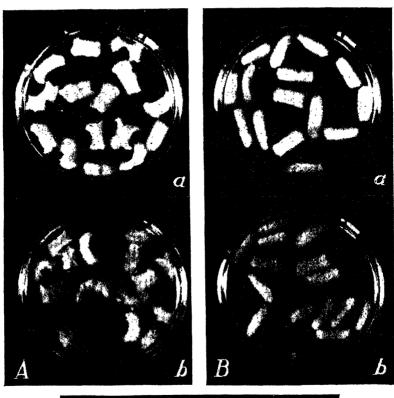




FIGURE 55.—Samples of boiled and sterilized rice: A, a, Fortuna untreated; b, Rexoro untreated. B, a, Fortuna parboiled; b, Rexoro parboiled. C, Patna.

the past American-grown varieties that have been compared with Patna in canned soups have not been so satisfactory. However, in comparing parboiled Fortuna and Rexoro rices with imported Patna,

the former appear to have all the desirable characteristics of the latter when boiled and appear even more desirable for use in canned soups.

The information obtained shows that treated rice has desirable characteristics that are at present largely unknown to the rice trade of the United States.

JENKIN W. JONES and JOHN W. TAYLOR,
Bureau of Plant Industry.

RIVER Gage Work
Pushed to Improve
Flood Forecasting

In September 1933 \$150,000 of emergency funds was allotted to the Weather Bureau to repair and improve its river gages.

Since that time the Bureau has been engaged, in cooperation with other governmental agencies, in standardizing and perfecting the gages used in river-stage and flood forecasting, and in installing gages to determine the relation of stream

flow to precipitation.

The Weather Bureau has always done its river-gaging work under a handicap. Funds had never before been available for the construction at one time of more than a few gages of a substantial and modern type. A large part of the money that could be allotted for gages had to be used in maintenance, because every flood partially wrecked a comparatively large number of the structures. Of all the gages then in use, only four gave a continuous record of river stages.

The emergency allotment is, therefore, not only helpful in giving employment in several hundred widely scattered small towns, but it is furnishing to the Weather Bureau a network of river gages that will

be of lasting benefit to the country.

Progress of the Work

On June 30, 1934, there had been erected 76 staff gages, 9 of the chain and weight type, 97 of the wire-weight, and 47 continuous recorders, a total of 229. The work was finished by December 31, and all of the gages maintained by the Weather Bureau either were replaced or were thoroughly inspected and found not in need of repair.

In addition to the 437 gages that are owned by the Weather Bureau there are 272 from which reports are furnished to the Bureau by other agencies, principally the Engineer Corps of the Army. This gives a network of 709 gage reports available for river-stage and flood forecasts. However, only 482 of the reports are made daily; 129 are furnished only during the months that may be considered to embrace the flood season, and 98 are received in times of threatened or actual flood.

The accuracy and timeliness of the river forecasts of the Bureau have, for a long time, been considered quite satisfactory by the general public. But the officials of the Bureau have always realized that the system under which the forecasts are made has an inherent disadvantage in that it has never been expressed in standardized formulas. Each forecaster has a set of rules for the rivers in his district, but these rules must be applied in individual cases through the experience of the forecaster. It is impossible for a forecaster to put a large part of his knowledge on paper and, when he is no longer available for this work, his successor must begin immediately to make an intensive study of the rivers in his district, and the effect on the rivers of rains

of varying intensity and distribution. He must also become familiar with the relation of run-off to precipitation as it may be modified by the season of the year. The condition of the soil and numerous other things must be given consideration. Even an intensive study does not thoroughly qualify a forecaster, but actual experience must be

had before he feels sure of himself.

Discharge observations or rating curves have been used to a very minor extent in Weather Bureau work. It has not been possible to employ them in any large way because they were not available. However, since 1922, and particularly since 1927, much stress has been placed on flood protection, and, in the last few years, inland navigation and power development have progressed steadily. Hence information in regard to the quantitative flow of streams is increasing more rapidly than ever before, and a further important increase will come with the continuously recording gages put in with Public Works funds.

Stream-Flow Measurements on Important Rivers

The Weather Bureau makes no stream-flow measurements. ever, through the cooperation of the Geological Survey, rating curves will be available for strategic points on the important rivers of the country, where recording gages are situated, and the officials of the Bureau will begin a study of the application of rating curves to riverstage and flood forecasting. It is realized that these curves can be no more than an important aid: that current meteorological information will always be indispensable in river forecasting, and that if, in rehabilitating and standardizing the network of river-gage stations, the meteorological stations are neglected, no satisfactory measure of success can be attained. But it is thought the study and application of the curves will remove a reasonable amount of the personal element that now surrounds forecasting, will make it possible to refine forecasts somewhat more than at present, especially on the large rivers, and will enable a forecaster to leave for his successor formulas that are based on sound and well-understood principles.

River-stage and flood forecasting is the primary purpose of the river-gage service, but the necessity for adding another feature, the determination of the relation between stream flow and precipitation, has been growing and has increased rapidly in the last year or so. A knowledge of this relation is necessary in making plans for power dams, irrigation projects, flood prevention and control, and farm and city water supplies. However, reliable statistics regarding the relation are too scant to be of great value, and the dry weather that has prevailed over most of the country in the last few years has shown engineers in a most positive way that sound plans for the water conservation, so necessary to agriculture and the general public, cannot be made without a definite knowledge of the volume of water streams may be expected to deliver in disastrously long periods of insufficient

rain.

Run-Off Data Useful in Economic Planning

A knowledge of rainfall is fundamental, but this knowledge, to be of full advantage, must be extended to show what becomes of the rain after it is received by the ground, and a definite determination of the relation of stream run-off to precipitation throughout the country would prove inconceivably valuable in planning the economic life of

the Nation. The climatological service of the Bureau collects precipitation data for the entire United States, and these data, in conjunction with the stream-flow rating curves prepared by the Geological Survey, will make possible the determination of this highly important relation between stream flow and precipitation.

M. W. HAYES, Weather Bureau.

SCREW-WORM Invasion of South Necessitates Modified Farm Practices

The screw-worm problem in this country has been intensified by the spread of this pest into the Southern States during the summer of 1933. This in-

sect is a native of North America, and it occurs in destructive numbers every year in the Southwestern States, where it is one of the most important problems of livestock raisers. All kinds of livestock, wild

animals, and even man are attacked by this pest.

The screw-worm flies are bluish green with three black stripes on the back and reddish-yellow face. There are two species of these flies. One lays its eggs in fresh wounds on any part of the body, while the other breeds in carcasses of animals and in old wounds on livestock. The larvae, or worms, of both species soon hatch and penetrate the tissues, in which they complete their growth in about 6 days. Then they drop to the ground and there enter the pupal or resting stage, from which the adult fly emerges a few days later.

The invasion of the Southeastern States produced an acute phase of this problem, because the farmers in that region were unfamiliar with the insect and its depredations, and many of them were financially unable to deal adequately with the pest. Under these circumstances it is not surprising that a condition approaching hysteria resulted in

many localities.

The pest appeared in northern Florida and southern Georgia in 1933 and caused considerable losses during the fall. In May 1934 infestations of all classes of livestock began to appear in this and adjacent territory. The ravages of the pest extended rapidly, and as the season advanced most of the State of Florida was involved and cases occurred in about 120 counties in Georgia and throughout the southern half of Alabama, Mississippi, and Louisiana. A good many cases also occurred in southeastern South Carolina, although the infestation there was not general. The belt of heavy infestation extended westward along the coastal area into southeastern Texas. A considerable number of animals in northwestern Iowa and some in central and southern Indiana were also infested with screw worms, but these appeared to be isolated areas of infestation. The pest is rarely found so far north.

Total Loss Stupendous

It has not been possible to gather definite information on the number of screw-worm cases or the losses due to this outbreak in the Southeast, but it is evident that the total loss has been stupendous. In many of the coastal counties in Texas, Louisiana, Mississippi, and Alabama, the stockmen report that their loss among sheep has reached 30 to 40 percent of their holdings and that the loss among their hogs has been nearly as high. The infestation among cattle is stated to have attained 15 to 20 percent and that among horses and mules 5

to 8 percent. The percentage of infestation in many counties in Georgia and Florida is equally high. Extensive unfenced areas are pastured by sheep, cattle, and other stock in each of these States, and the losses have invariably been higher where the stock has been run

on such open range.

One of the leading predisposing causes of screw-worm infestation in the Gulf States is the attack of the Gulf coast tick. This tick affects all kinds of animals, usually in the external ear, which soon becomes swollen and cracked, forming an ideal place for screw worms to attack. The exudate from the screw-worm-infested wound runs down into the ear and over the face, encouraging the flies to lay eggs upon and the worms to burrow into the more vital parts of the animal. In much of the screw-worm-infested territory, therefore, the control of the Gulf coast tick is an important step in dealing with the screw



FIGURE 56 .- Peeling brands attacked by screw worms.

worm. The habits of this tick do not permit its eradication, or even satisfactory control, by dipping, as practiced in the eradication of the cattle tick. The application, with a swab, of pine-tar oil to the inner surface of the ears kills most of the worms and protects the animal from infestation for several days.

Infestation of Young Animals

Another important cause of attack and consequent loss is the birth of young during the season when screw worms are active. During this outbreak many stock owners found that practically every newly born lamb, calf, and pig was attacked. In these young animals the navel or mouth is usually involved, and in the former location the burrowing maggots soon reach vital parts and cause the animal to die. In the Southeastern States branding (fig. 56), castrating, and marking have been carried on heretofore at any time the stock owner's fancy

dictated, and this practice has given rise to innumerable infestations. Large numbers of freshly branded and ear-tagged cattle shipped into the infested area in accordance with the Government's drought-relief program became infested with screw worms, and this led many to believe that the pest was introduced from the West with these cattle. The fact that the insect was prevalent in the Southeastern States in 1933 and in the spring of 1934 before the drought-relief cattle were introduced clearly disproves this.

Many stock raisers in the Southeast have asserted that unless the screw worm is controlled they will be forced to abandon livestock raising. This statement has emanated chiefly from the large owners who have run their herds and flocks on open range. It seems certain that stock raising cannot be carried on profitably in the presence of screwworm conditions such as those existing in 1934 without decided

changes in methods of management.

Ranges must be fenced in order to enable the stock owner to check up closely on his stock and treat injured or screw-worm-infested animals promptly and regularly. The extreme importance of prompt treatment is emphasized by the recent discovery that there are two distinct species of screw-worm flies, one of which apparently breeds only in the tissues of living animals. Thus, if infested animals are not treated, this most destructive form may multiply until a pasture is heavily stocked with them.

The heavy infestation of newly dropped young in the summer and fall makes necessary the control of breeding time so as to avoid births during the most active fly season. This, in turn, demands fences to control the breeding stock and often the production of supplemental feeds to keep the dams in proper condition for dropping their young

early in the spring.

The fencing of pastures invariably leads to the breeding of better animals, and the possession of more valuable animals demands better care of them; thus the whole industry is ultimately raised to a higher level.

The screw worm compels stockmen to brand, castrate, and mark their animals when flies are not abundant. A uniform breeding season aids in this, and fences are important.

Control Work Undertaken

To meet the urgent needs of the acute screw-worm situation that developed in the Southeast subsequent to the making up of the budget, and to permit the Department to carry on a control campaign, arrangements were made, with the approval of the Bureau of the Budget, for the transfer of \$5,000 from an appropriation made to the Bureau of Entomology and Plant Quarantine for another purpose. This fund was used for the expenses of Department men in determining the status of the problem in the South and in directing the control To complete the organization and to provide some of the materials for treating infested animals, the Emergency Relief Administration in each of the States of Florida, Georgia, and Mississippi provided \$7,500. An organization consisting of regional and county control directors was quickly built up in each of these States; and, as the need of familiarizing farmers with the proper methods of treating infested animals and protecting others from attack was apparent, an intensive educational campaign was undertaken in cooperation with the various interested Federal, State, and local agencies. Many meetings were held, in some of which demonstrations were conducted to show how to apply benzol to kill the worms and pine-tar oil to repel the flies, how to burn carcasses (fig. 57), to build treating chutes, etc. To acquaint stock owners with the proper materials for treating screw-



FIGURE 57.—Demonstrating carcass burning during screw-worm-control campaign in Mississippi.

worm cases, small quantities of benzol and pine-tar oil were given to those having infested herds, especially those unable to buy these materials.

In this work an effort was made, not only to enable the farmers to meet the present problem effectually, but to teach them how to prevent the recurrence of such heavy losses as were experienced during this outbreak, and to

improve farm practices so that livestock raising may be more profitable in the future.

F. C. Bishopp, Bureau of Entomology and Plant Quarantine.

SHEEP Improvement in U.S. Should Result from Recent Importations

During the last decade the Bureau of Animal Industry has made a special effort to supply the State agricultural colleges and experiment stations with

rams of the highest quality to be used by them in the production of superior breeding animals. These in turn are passed on to farmers for the production of lambs and wool. Such animals have gone out from this Federal Bureau to 31 State institutions and in most cases

have left a decided impression upon the sheep industry.

In order that this service may be made as useful as possible and that the quality of the animals may be the most meritorious, the Bureau recently acquired for its breeding operations at Sheep Acres, Beltsville, Md., some of the finest animals of the Shropshire, Hampshire, and Southdown breeds available from the most successful sheep-breeding establishments in England and Scotland. A consignment of merit which arrived in November 1933, consisted of 20 ewes and 4 rams especially selected at the dispersal sale of the famous Corston flock of Shropshires owned by the late T. A. Buttar of Coupar Angus, Scotland (figs. 58 and 59).

A second consignment of the most select animals available arrived at the Government farm in September 1934. In this last importation were 6 yearling ewes (fig. 60) and 2 stud rams of the Hampshire breed. One of these rams, bred by Maj. V. S. Bland of Aldbourne, England, was selected for his outstanding individuality (fig. 61). He was a show ram that was undefeated during the entire show season. The

other ram was a show ram as a lamb, bred in the famous Pendley flock of Tring, England. He was used extensively as a sire the fol-

lowing fall and has proved his ability to sire lambs of exceptional merit. Four of the ewes were outstanding show animals, bred by E. Clifton Brown of Burnham, England, and two were select breeding ewes from the famous Flower flock at Chilmark, England. This consignment of Hampshires gives the Bureau as good a representation of the breed as was possible to find in England. Their offspring should prove to be of superior merit and should justify their importation by the increased efficiency of their progeny in the flock.

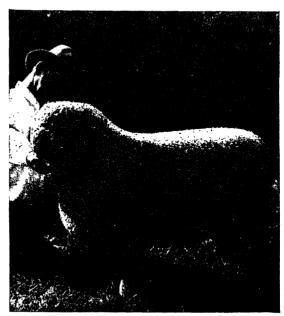


FIGURE 58.—Shropshire stud ram, Corston no. 84, yearling ram in service in the Bureau of Animal Industry's flock, Beltsville, Md. The ram was obtained at the dispersal sale of T. A. Buttar, of Coupar Angus, Scotland, in 1933.

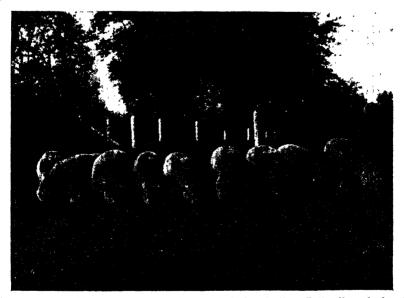


FIGURE 59.—Shropshire yearling and 2-year-old ewes obtained at the T. A. Buttar dispersal sale and imported to add to the Bureau's breeding flock at Beltsville, Md.

The Southdown selection consisted of the champion pen of yearling ewes at the English Royal Show, 3 other show ewes, and a show ram (fig. 62) of exceptional merit from the flock of J. Pierpont Morgan.

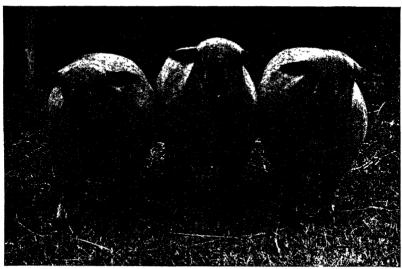


FIGURE 60.—Three of the Hampshire yearling show ewes which won first prize wherever shown in England, including the English Royal Show at Ipswich. These ewes were part of the importation in 1934 and are now a part of the breeding flock at Beltsville, Md.

In addition to these, 5 yearling breeding ewes and an exceptional stud ram selected from the famous Luton Hoo flock were obtained. This outstanding ram was champion at all the principal shows during the

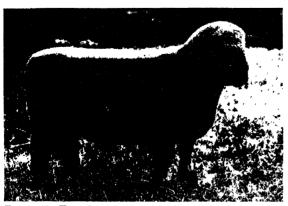


FIGURE 61.—Hampshire yearling ram which won first prize at all principal English shows, including the Royal at Ipswich in 1934. Obtained for a stud ram in the Government flock at Beltsville, Md.

season, including the Royal at Ipswich. This consignment is unquestionably one of the best of the breed ever brought into the country and the superior merit of the animals should be manifest through their progeny for many years to come in Southdown flocks of the United States.

The other animals in this importation were two Shropshire rams, one a show ram

that was bred in the flock of E. Craig Tanner, Eyton-on-Severn, England, which was first in his class at the Royal, and the other a show yearling bred by Maj. J. N. Ritchie of Tern, England. These rams should combine well in blood with the Buttar stock, imported the preceding year.

Although these English-bred sheep are not considered superior in

all cases to those produced in the United States, the admixture of the best available imported blood to the best strains now being produced in this country should hasten flock improvement materially. Complete performance records are being kept on these imported sheep and only those that prove superior in their pro-



those that prove Figure 62.—Southdown ram, Aldenham 839. An outstanding show ram and sire. Obtained for use at Beltsville, Md.

duction of wool and lambs will be retained for use in the Bureau's experimental flocks.

C. G. Potts, Bureau of Animal Industry.

SIRUP Buying from Farms By Relief Agency Shows Need for Better Quality The farm-made sirup industry involves a processing of raw material on the farm. Instead of selling sugarcane and sorgo as such, these crops

are made into sirup either on the farms of the growers or at farm custom mills on a share basis. At least 60 percent of the production is marketed as an important source of cash for thousands of small farms, located principally in the South. By processing sugarcane and sorgo and marketing them in the form of sirup, the farmer has an opportunity for obtaining a considerable "step-up" in value.

Recent purchases of sorgo and sugarcane sirups by the Federal Surplus Relief Corporation direct from farmers through State extension marketing services in several producing States have resulted not only in making the relief dollar do double duty, but have also thrown an economic searchlight upon the problems of sirup producers in handling this subsistence and cash crop which is of importance on many small farms. The purchase on behalf of the Federal Emergency Relief Administration of sirup direct from farmers on a scale of hundreds of thousands of gallons has emphasized the variation in quality which is a serious obstacle to the more profitable marketing of this crop.

On first thought this difficulty confronting the farm-scale sirup producer may appear to be a simple marketing problem, but further consideration shows that the problem is more complex than one of simply establishing the usual marketing program as applied to fruits and vegetables. The establishment of a grading system and marketing program alone will not solve the problem, since too large a percentage of farm-made sirup is not merchantable because of various defects such as sugaring, sediment, turbidity, dark color, and strong flavor. It is necessary to improve production at the source in order that the percentage of off-grade sirup may be reduced to a point at which a grading and marketing program will be effective.

Chemical and Technological Research

Basic chemical and technological research by the Bureau of Chemistry and Soils is resulting in the solution of various difficulties which have been the cause of defects in quality and which heretofore have stood in the way of a sufficient degree of uniformity in quality. Effective methods have been developed for preventing sugaring (crystallization of sucrose) in both sugarcane and sorgo sirups and for obtaining better control of color and flavor. Crystallization of sucrose (cane sugar) can be prevented by transforming a portion of the sucrose into invert sugar. This is accomplished by adding to the sugarcane juice or semisirup a very small proportion of invertase, which is an enzyme that has the specific property of inverting sucrose. In sugarcane sirup of strong flavor and dark color the flavor and color can be reduced by the use of decolorizing carbon. A method for using decolorizing carbon on a farm scale has been devised.

A practical farm-scale method of using the malt-extract method for preventing gelatinization of starch in sorgo sirup has been devised. The malt extract, which is added to either the sorgo juice or to the semisirup, transforms the starch into sugar and dextrin. This treatment not only prevents slow boiling and subsequent jellying of the sirup, but also yields a sirup which is much clearer in appearance than that ordinarily obtained. The method is simple and the cost is small. More basic research along this line is needed in order to provide a sufficient solution of the problem at the source as a prerequisite to

grading and marketing.

Coordinated Program Desirable

For the purpose of bringing about more profitable marketing of farm-made sirups in a manner comparable with the marketing of fruits and vegetables, it is necessary to have (1) correlated agronomic and basic chemical technological research for the development of improved production methods which will result in sirup of better and more uniform quality, (2) timely and rapid dissemination of research information through the extension services of the various sirup-producing States so that research results can be applied without delay, and (3) cooperation of farm marketing agencies for operation of grading and packing plants so as to effect an orderly marketing of

farm-made sirups.

One State marketing agency, which purchased over 300,000 gallons of sugarcane and sorgo sirups during the past year for the Federal Surplus Relief Corporation, is now taking steps toward the installation of grading and packing plants for the purpose of placing farmmade sirup on an equal marketing basis with vegetables and other farm crops. An important influence for extension of the commercial market for farm-made sirups is the wide distribution of sirups purchased by the Federal Surplus Relief Corporation for relief purposes. These sirups have been distributed in some areas in which heretofore very little farm-made sirup has been consumed. Favorable reports regarding the reception accorded these sirups have been received and this distribution may have an important influence in widening the commercial market in later years. Sorgo and sugarcane sirups have important nutritional and dietetic properties which are valuable for supplementing other foods in the diet.

E. K. Ventré, Bureau of Chemistry and Soils.

OIL-Erosion Studies
Develop Information of
High Practical Value

It has become a matter of common knowledge that the uncontrolled action of wind and water has done serious damage to great areas of some of the

best agricultural lands of the United States. The installation of a series of erosion-control experiment stations was begun late in 1929 to study in a systematic way the character and control of the natural forces at work under a wide variety of soil and climatic conditions. So far 10 stations have been set up in various parts of the country by the Department. They have been established in cooperation with State experiment stations and other local agencies.

At some of the stations much leading information already has become available on several phases of the subject which should facilitate the task of planning a land-use program for denuded and semidenuded acres. This information is proving useful as a basis for establishing general control measures against current and future losses of soil and

water.

The development of this phase of the work has been particularly timely in connection with the national program of conservation. Many influences have been brought to bear upon this subject, and more control work has been started during the past year than ever before. Programs of work have been intensively fostered in this field not only by the regular Extension Service of the Department and by the E. C. W. camps of the Civilian Conservation Corps, under the direction of the Department of Agriculture, but also by the recently created Soil Conservation Service in the Department of Agriculture. Intensive efforts are being made by the latter to develop impressive control demonstrations, based upon the data furnished by the investigational work of this Department's erosion experiment stations. This work is under way on more than 20 watersheds, most of them 100,000 to 200,000 acres in size, located in widely different sections where erosion is bad.

Wind Erosion

The terrific dust storms that prevailed throughout the Middle West during the past year have developed public concern regarding the erosion problem. The more violent of these storms traveled eastward to the Atlantic seaboard and passed out to sea carrying thousands of tons of choice soil materials swirling in mid-air to heights of 2 or 3 miles. In many ways such disturbances are comparable to the "black storms" of Russia. Following a violent storm of this type in the Ukraine on April 25–26, 1928, 700 widely distributed measurements showed that a total of 15,400,000,000 tons of soil had been swept up into the air and deposited in other parts of the country as well as in Poland and Rumania.

This type of soil denudation, just as in the case of sheet and gully erosion by water, is the usual consequence of injudicious land use in these semiarid sections of the country. The illustrations in figure 63 show in a general way the extraordinary conditions that prevail during such storms and those that follow. Control of soil losses by wind may be promoted by the use of judiciously spaced windbreaks and protective covers of close-growing vegetation, as well as by the adoption of proper methods of cultivation, especially during critical seasons of the year.





Figure 63.—Wind crosion in the Midwest (Dixon Valley, S. Dak.) in the spring of 1934: A, A modern farm these and buildings engulfed in a dust storm, the outline of the house alone being visible in the distance; B, after the storm, the same farm home shown in A, taken from the same position; C, machinery buried in the farm yard by soil which drifted in from the fields during the storm; D, road conditions following a dust storm and rain when the former drifted the highway over with fine soil to a depth ranging from 12 to 18 inches and the latter transformed it into a deep bed of soft mud.

Investigational Work on Erosion Control

The aggregate area served by the present series of erosion stations is approximately 225,000,000 acres. Each station already has contributed constructive information for direct application in the field and for extension activities. This information has dealt with the relative rates of soil and water losses from various soils under definite conditions of slope, with climatic relations, and with surface exposure and other treatments, and has included suggestions for erosion control under

working conditions.

Rather definite physical relations exist between established soil types and erosional behavior. Type relations and comparisons are being studied especially from the standpoint of infiltration rates. Important results are accumulating which are of basic value in an accurate evaluation and study of soil erosion. A definite knowledge of the sum of the basin capacity, in inches of rainfall, of the surface conformation of a soil developed by a given type of cultivation or treatment, and of the rate of infiltration of water into that soil under those conditions, is a factor of considerable importance in run-off and erosion control. The difference between this value and the total rainfall must represent the amount that will run off the surface, be lost to plant growth, and cause erosion unless the soil is protected. The effect of the incorporation of organic matter, and of such cultural practices as careful contouring or the use of the hole-digging machine on the infiltration rate, makes these cultural practices of primary importance in erosion control. They may also have a secondary effect through the direct improvement which they exercise over plant growth.

Vegetation Plays Important Role

The dominant role of vegetation, whether it be grass, close-growing

cover crops, shrub, or forest cover, as a controlling factor in soil and watervlosses. has come to stand out in an exceedingly important way. Highly effective control measures involving vegetation are much in use where gully control is a major aim. The effectiveness of vegetation in protecting against gully encroachments is well shown in figures 64 and 65 taken at the Bethany (Mo.) station where a considerable amount of work along this line is in progress. The role of vegetation in holding the soil in



FIGURE 64.—Gully control with the use of vegetation. Gully H at the Bethany Soil Erosion Experiment Station on Shelby silt loam prior to setting up control work. This is typical of gully formation in this soil.

place is, of course, not all new information. Were it not for this natural force, which has been continually at work throughout



FIGURE 65.—Gully control with the use of vegetation. Gully H, as shown in figure 64, taken 3 years after setting wire checks, plowing down sides, seeding, and setting trees.

Were it not for this the ages, soils never would have developed as we now find them under virgin conditions, even on comparatively slight slopes. Its effectiveness is well shown by the simple comparisons of table 11 which represents soil and water losses from control plots on a wide variety of soils in widely different sections of the country under definite conditions of slope and surface exposure. According to the results presented as soil and water losses it is apparent that closegrowing vegetation such as grass, alfalfa. etc., slows down water

losses, and decreases soil losses hundreds and even thousands of times when compared with uncontrolled plots.

Table 11.—Comparison of soil and water losses by surface run-off from selected treatments of the control-plot series at several of the soil-erosion experiment stations which show the striking degree of control that is possible through the proper use of vegetation

Area, soil type, and rainfall (incher)	Plot treatment ¹	Soil loss per acre	Loss of rainfall
Upper Mississippi Valley, La Crosse, Wis., Clinton silt loam, 16 percent slope (1933 only). 29.11. Missouri-Iowa, Bethany, Mo., Shelby silt loam, slope 8 percent (average 3 years, 1931-33). Average annual rainfall, 33.53. Red Plains, Guthrie, Okla., Vernon fine sandy loam, slope 7.7 percent (average 4 years, 1930-33). Average annual rainfall, 32.92. Texas-Arkansas-Lousiana, sandy lands region, Tyler, Tex., Kirvin fine sandy loam, slope 8.75 percent (average 3 years, 1931-33). Average annual rainfall, 42.31. Central piedmont, Statesville, N. C., Cecil sandy clay loam, slope 10 percent (average 3 years, 1931-33). Average annual rainfall, 42.91.	Bare soil, uncultivated. Continuous corn Continuous barley. Continuous bluegrass. Bare soil, uncultivated. Continuous corn Continuous orn Continuous slafa Bare soil, uncultivated. Continuous alfalfa Bare soil, uncultivated. Continuous cotton Bermuda grass. Bare soil, uncultivated. Continuous cotton Bermuda grass. Bare soil, uncultivated. Continuous cotton Continuous grass.	59. 9 12. 0 . 003 112. 48 61. 16 . 36 . 22 14. 59 28. 05 . 040 12. 20 19. 06 . 20 65. 3	Percent 15.9 19.2 17.8 2.9 25.98 2.38 7.72 3.40 26.04 14.18 1.51 18.20 18.00 1.50 32.0 9.7 5.2

¹ All plots 72.6 feet long and 6 feet wide, or one one-hundredth of an acre in size.

The Importance of Proper Crop Rotations

One of the most important fields for study in the relation of plants or plant covers to erosion control, especially where cultivated crops are necessarily involved, is to be found in the adjustment of crop rotations for best results. Thus cotton planted continuously on a Vernon fine sandy loam is much more conducive to erosion and water losses than when used in a rotation of cotton, wheat, and sweetclover. Under the former condition it developed an average annual soil loss of 28.0 tons per acre, and an average annual water loss of 14.2 percent of the rainfall over a 4-year period, against a loss of 16.4 tons of soil and 11.7 percent of the rainfall where the crop appeared in the rotation referred to but under otherwise identical conditions. When the average for the entire rotation is considered the loss of soil is reduced to 6.3 tons per acre and that of rainfall to 11.7 percent. The unusual effect of the association of the other crops with cotton under the conditions of the rotation referred to in reducing these losses is readily apparent. The same relation has been found to hold for corn and other cultivated crops in this and other areas.

Strip Cropping

Under natural conditions of cultivation, strip cropping, or the alternation of close-growing crops such as alfalfa or sorghum with culti-



FIGURE 66.—Strip cropping on Shelby slit loam (slope 4 to 5 percent), field L at the Bethany Soil Erosion Experiment Station, looking south across one of the sodded draws or natural drainageways. The strips are each 115 feet wide and are used for a 3-year rotation of corn, oats, and clover laid out on a modified contour with permanent meadow below and an irregular area of alfalfa above.

vated crops such as corn or cotton, in strips of definite width, depending on the degree of slope and other factors, shows highly interesting possibilities for erosion control. The procedure of course falls within the limitations of availability of desirable crops for a given soil, locality and type of farming as well as the seasonal exposure involved during the periods of seeding. The degree and uniformity of slope as well as

the systematic protection of all depressions or natural waterways are also important factors requiring careful attention. Where the practice is to be adapted to an impervious soil, the strips should be placed somewhat off the contour or slightly graded down the slope toward the protected drainageways, in order to develop surface flow in that direction rather than down the slope.

On the impervious Shelby silt loam at the Bethany station in Missouri, strip cropping on the modified contour, with well-protected drainageways, is proving a very practical and efficient method of reducing erosion on slopes of moderate grade where severe gullying has not produced a rough topography. The arrangement of these strips in relation to the protected drainageways for a rotation involving corn,

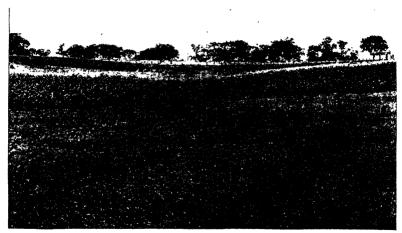


FIGURE 67.—Strip cropping on Shelby silt loam (slope 4 to 5 percent) as shown in figure 66, but looking up the sodded draw or drainageway that functions not only in carrying water down the slope from above the established strips, but also from the strips themselves as it is delivered from them to such a natural channel-way as a result of the slight grade down the slope on which they are laid out.

oats, and clover at the Bethany station is well shown in figures 66 and 67. Generally similar results have been obtained at the Temple and Tyler (Tex.), Clarinda (Iowa), and Guthrie (Okla.) stations.

Terracing and Other Contour Operations

The principal weakness in any attempt to use vegetation alone as a complete control for erosion, expecially on steeper slopes, lies in the fact that under practically all farm conditions where erosion is a serious factor, such areas must be used for cultivated crops at some point in the rotation. The supporting effect of terraces thus becomes important. While terracing is not regarded as a complete control for sheet washing under conditions of exposed, cultivated surfaces on slopes conducive to the erosion of a given soil, the use of broad contoured channelways of this type across the face of erosive, sloping fields tends very effectively to reduce sheet erosion and to prevent the development of the more severe type of gullying.

Combination Methods Necessary

Just as control of soil and water losses by vegetation requires the assistance of terracing or other forms of contour operations under certain conditions of soil, crop, and slope, so terracing requires the assistance of the plant as completely as this protection can be afforded. Erosion control increases with the extent that vegetation is used. This is due to the fact that cultivated slopes, even on terraced areas, are exposed to some sheet erosion. This protection is afforded by the use of more cover crops and the more frequent use of thick-growing crops in the crop rotations and by effecting certain combinations of strip cropping in which the strips are definitely arranged in relation to the terrace positions. Studies are under way at some of the stations involving the combination of strip cropping with a lower type of terrace than is ordinarily constructed especially under moderate conditions of rainfall. Combinations of mechanical means with vegetation used in a proper manner have interesting possibilities.

R. V. Allison, Bureau of Chemistry and Soils.

OIL Survey Provides Various local and State governments, Data for Classifying faced with problems of tax delinquency re-Land; Planning Uses sulting from the inability of farmers to earn an income from soils that are too un-

productive or remote from markets, are demanding some program for land use which will enable the citizens of the distressed communities

and counties to support their schools and roads.

In one form or another such programs are at present under way in New York, Wisconsin, North Dakota, Michigan, and Washington. The various measures put into effect by these governments for planning land use and for the conservation of resources immediately call for an accurate inventory of the relative productive values of the different soils of areas concerned. Obviously a classification of the land is the first essential step in attempting to meet this problem. growth of plants, whether for crops, grazing, or forestry, is so intimately bound up with the nature of the soil type that the physical quality of the land ultimately determines, more than any other factor, the possibility for success of any agricultural enterprise. In the case of the cropping-use group especially, the units of operation—farms and ranches—are small and individual. Physical information about the land must be sufficiently detailed in its geographic expression on maps to indicate clearly the nature of the land on each unit. As a further requirement it was necessary to have an approximate idea of the total extent of the various soil types, capable of use for the various types of enterprise.

Fortunately about half the nonmountainous part of the United States had been covered by the soil survey and the data were available for the necessary land classification. A part is covered by reconnaissance soil surveys made on a scale of about 2 to 6 miles to the inch and showing the general distribution of the principal soil types. The greater portion is covered by detailed surveys on a scale of 1 mile to the inch and showing accurately the distribution of the soil types and other physical features of the land in close detail. Detailed reconnaissance surveys cover projects having nonmountainous areas requiring detailed work and mountainous areas in which only general features

need be shown.

The soil map is accompanied by a report describing the various soil types and explaining their use. The general conditions of climate, vegetation, physiography, geology, and drainage are described as well as the detailed condition for each type. Agricultural practices are discussed, giving statistics as to crops grown, yields obtained, market facilities, and similar material having a bearing upon the use of the land.

Land Inventory Compiled

Each soil type has quite definite, determinable possibilities for the growth of crops, grasses, or forests. Through the long accumulation of data and experience by research workers and farmers on soil types, much definite information is now available. The Division of Soil Survey has prepared definite ratings of natural productivity for each soil type for the various crops grown in the majority of the areas. These ratings were made in cooperation with the State experiment stations and represent the result of accumulated experience on each soil type. These data have been compiled for the United States as a whole and may be summarized in 5 classes from 1, the best, to 5, the poorest, according to natural productivity as shown in table 12.

Table 12.—Area of the United States covered by the soil survey and percentage of the land surveyed that falls in each class

Class	Area surveyed	Percent-	Class	Area surveyed	Percent-
1	Acres 100, 752, 633 210, 707, 665	5	5	Acres 881, 931, 310	47
3 4	346, 172, 420 362, 025, 639	11 18 19	Total	1, 901, 589, 667	100

Method of Land Classification for Tax Assessment

The Division of Soil Survey has completed a cooperative project with the North Dakota Agricultural Experiment Station for a detailed land classification in McKenzie County, N. Dak. Billings County of the same State will be completed early in 1935, and Morton County somewhat later. Other counties are being taken up as rapidly as

possible.

This work was organized at the request of the local officials in the counties for the special purpose of making assessments for taxes on land according to its producing capacity. Although such a classification of lands on a uniform basis for appraisal rests primarily on the nature of the soil, other factors necessarily are considered. The degree of slope and of stoniness are carefully noted, as well as the nature of the grass cover, forest growth in the stream valleys, presence of alkali, accessibility to markets, and similar factors which influence the production of farms and ranches.

The procedure developed for this work consists of four principal

steps:

(1) The soils and other physical features of the land are mapped in detail on a scale of 2 inches equals 1 mile, in classes defined according to their practical significance.

(2) The natural productivity of each important combination of soil, slope, and stoniness, is determined by studies of the actual use of these lands, both for grazing and for crop production. Thus each land type is given a numerical rating in terms of its percentage of the ideal, or best-producing land of the county, both as cropping land and as grazing land.

(3) The use group (cropping or grazing) of each tract of land is determined largely on the basis of the amount of the various land types and on accessibility. Land naturally adapted to crops is rated as cropping land unless the area is too small or too far distant from other cropping land for economic farming. In this area, land unsuited

for cropping is rated according to its productive capacity.

(4) According to the relative amounts and productive capacity of each of the land types and the social unit of land (farm, ranch, or other holding) each tract of land is given a composite rating in terms of ideal land, as 100 percent. These values are reduced conformably to a uniform schedule according to their accessibility to markets, as determined by the distance and the type of road. Those grazing lands lacking natural sources of water take a further reduction. As the lands in North Dakota were surveyed and sectionalized by the Government Land Office, the land is listed on the tax roll by forties according to the survey. The results of the land classification are also given on the basis of the 40-acre unit. Thus each forty is given a rating between 0 and 100 percent according to its productive capacity, in an economic sense in relation to the best, or ideal land of the county.

With such a classification in hand, it only remains for the local officials to determine the assessed valuation of ideal land, and all other land takes its appraisal according to its productive capacity. County officials have encouraged the development of this procedure with the thought of obtaining a more equitable and practical distribution of local taxes on farm land. At the same time the data obtained in the course of the classification are those required for any planning of land use. These same appraisal values are being used in the acquisition of

lands for grazing districts and public parks.

Land Surveys in Tennessee

In order to furnish a basis for planning agricultural development in the Tennessee Valley, the Division of Soil Survey is cooperating with the Tennessee Agricultural Experiment Station and the Tennessee Valley Authority in making soil surveys for that area. Detailed mapping of the soil types and other physical features of the land is followed by a crop survey in order to establish the yields, crops, and kinds of management most characteristic of each of the widely different soil types.

A somewhat similar type of survey is being conducted in cooperation with the Washington Agricultural Experiment Station at the request of the local residents, in order that a more practical use of lands may be developed and the local expenditures, especially for schools and roads, brought into harmony with the potential producing power of

the area.

Charles E. Kellogg, Bureau of Chemistry and Soils.

TARCH-Making from Cull Sweetpotatoes is Placed on Commercial Basis The process devised by the Bureau of Chemistry and Soils⁵ for production of starch of high quality from cull sweetpotatoes is now being

placed on a commercial basis and it is anticipated that a new starch industry will be developed in this country as a result. The Federal Emergency Relief Administration is financing a sweetpotato-starch factory at Laurel, Miss., to provide employment. This factory will be operated in the interest of a cooperative association of sweetpotato growers and, after setting aside necessary reserves, profits will be distributed to growers on a pro-rata basis. Selection and installation of equipment, as well as initial operation of the factory, are under the technical supervision of the Bureau of Chemistry and Soils. The capacity of this factory is about 2,000,000 pounds of starch annually.

Sweetpotato starch has been tested in several cotton mills and found to be satisfactory for the sizing of warp yarn and for finishing. It gives fully as good results as imported potato starch and also has an advantage in economy in quantity required. All but a small proportion of the potato starch imported into the United States is used in cotton

mills.

Dextrine prepared from sweetpotato starch has been tested by the Bureau of Engraving and Printing, and on the basis of both laboratory and machine tests, has been found to be equal to the dextrine made from imported cassava starch which is now used as an adhesive for stamps and for similar purposes. Sweetpotato-starch dextrine is the first domestic product which has met the requirements of the Bureau of Engraving and Printing for this purpose. Under the law requiring the Government to purchase products of domestic origin whenever feasible, it is anticipated that a market will be afforded sweetpotato-starch dextrine for use on postage stamps, envelops, etc., produced or used by the Government.

As a byproduct of starch production there is obtained a residual pulp which after drying can be sold at a profit to feed mixers. The dried pulp can be mixed advantageously with cottonseed meal so as to produce a better balanced ration for cattle feed. Experiments are being made on the possibility of also adding to this feed ground, dried sweetpotato vines which by analysis are not greatly inferior to alfalfa

in feeding value.

Transportation Costs

Low transportation costs are an important factor in the success of any industry. The prospective sweetpotato-starch industry will, in general, have minimum transportation costs. Sweetpotatoes are available in large quantities in areas contiguous to southern cotton mills which are expected to use a substantial proportion of the starch. Cottonseed meal is produced in the same areas and the feed will be utilized locally, sales being effected through local feed mixers.

This industry is being developed primarily to afford a market for cull sweetpotatoes, which constitute a large proportion of the field-run crop and which are now largely unremunerative. However, under some conditions it may be both profitable and economically advisable to use field-run sweetpotatoes for starch production. This new industry may contribute to a solution of the problem of utilization of cut-over pineland in the South, particularly in the coastal plains

⁵ See Yearbook of Agriculture, 1932, p. 522; 1933, p. 362.

section, which is especially suitable for growing sweetpotatoes. Sweetpotatoes are particularly adapted to newly cleared lands such as cut-over pinelands in the South (U.S. Department of Agriculture Farmers' Bull. 999, Sweetpotato Growing, p. 2). It has been sugcested that a feasible means of handling this cut-over land problem is partial reforestation (utilizing turpentine and rosin to cover carrying charges until the trees reach lumber size) together with the growing of sweetpotatoes and other suitable crops. This new industry is expected to provide a market for considerable quantities of sweet notatoes.

H. S. Paine. Bureau of Chemistry and Soils.

TREAM-IMPROVEMENT Work in the National Forests to Develop Better Fishing Civilian Conservation Corps

Possibly no work done in the national forests by the and other relief agencies

presents such great opportunities for immediate returns or has proved of so much interest to the general public as the work of stream im-



FIGURE 68.—Rearing ponds of various types have been constructed.

provement to develop better fishing. In the Medicine Bow National Forest of Wyoming, as well as in the many other national forests in Wyoming and Colorado where stream-improvement work has been done, it has usually been of two classes. Rearing ponds have been constructed into which fry can be placed for a year or two before being liberated in the trout streams, and improvements made in the streams to better conditions under which trout may grow and develop (fig. 68).

Conditions in mountain areas are at best severe and small fry have a slim chance of survival against their many natural enemies, including larger trout, and because of the change from hatchery to field conditions, such as swift running water, small supplies of natural food, and handling between hatchery and stream or lake. To develop fry to fish of sufficient size to withstand most of these dangers, is the purpose of rearing ponds. These ponds have been built in localities of high altitudes where mountain lakes of glacial origin are to be kept stocked with trout and where fry are retained for but a single season, as well as at lower elevations where the fry may be left for 2 years, when they will be of sufficient size to care for themselves with little or no loss. Loss in planting fry directly into streams or lakes has been reported as high as 95 percent, while loss in small fish transplanted from rearing ponds to streams or lakes is usually almost negligible.

Types of Rearing Ponds

Various types of rearing ponds have been constructed, including earth dams with metal or wood standpipes for draining the pond, earth dams with concrete cores, and timber dams underlaid with loose rock. Some very cheap and serviceable ones have been constructed by making use of beaver dams and installing standpipes and drainage boxes at costs of but \$50 to \$75. The general plan is to put fry into



FIGURE 69.—Stream improvements provide deep, quiet water and opportunity for plant life to develop, which in turn induces insect life.

the pond in the spring and drain the pond either during the following fall or the second fall, and transport the small fish to streams and

lakes by truck or pack horse.

Improvements placed in the rapidly flowing, rock-strewn mountain streams present an opportunity to greatly increase the production of trout. The mountain streams of the West are limited in acre production of fish both by lack of food and depth of water. Improvements now being made include the construction of simple log and rock dams to form stream pools. These provide deep, quiet water and opportunity for plant life to develop, which in turn induces insect life (fig. 69). Deflectors or jetties which force the current to scour the upper portions of pools are also being built as well as brush or log covers close to the shore under which trout may avoid the direct sunlight and take refuge from kingfishers or other enemies.

So far the work is largely experimental, but it is already showing surprisingly favorable results and it is felt that in a year or two these

efforts will greatly increase the fishing opportunities in a region now subject to steadily increasing use.

HUBER C. HILTON, Forest Service.

SUGARCANE Crossed With Sorgo Gives Seedlings Potentially Valuable

With due regard for inadequate conception of what constitutes a species and often also a genus in the plant world, it may safely be said

that interspecific crosses are not common and intergeneric crosses are exceedingly rare. Well-authenticated examples of intergeneric hybrids in the crop plants are corn-teosinte and wheat-rye, but the majority of cases reported do not stand close scrutiny. It is of special interest, therefore, to record progress in crossing sugarcane (Saccharum officinarum L.) with closely related genera in the tribe

Andropogoneae or bearded grasses.

As early as 1848 Leonard Wray, a progressive planter operating in Jamaica and later in India, published an account of experiments performed some years previously in which he attempted to cross sugarcane with sorghum (bajra) and Indian corn (boota). Mr. Wray's purpose was not to improve the cane but to find out if by this means sugarcane could be made to produce viable seed. His technic, part of which he owns may have been based on ideas perhaps fanciful, consisted of carefully removing the "eyes" or buds of each node on the prospective parents as they developed side by side, then bringing the "arrows" or flowering stalks into contact and shaking them smartly from time to time. His hope that he might get the flowers of the sorghums and corn "to impregnate and fructify those of the cane" was not realized, and he concluded that sugarcane will not "perfect its seed", a generalization that was disproved only after nearly a half century had elapsed. As a strange coincidence it was in connection with work leading to the discovery that sugarcane can produce viable seed that the next recorded attempts to cross Saccharum with other genera were made. In 1886 Soltwedel tried to cross sugarcane with Erianthus arundinaceum (Retz.) Jesw. reciprocally, but only the panicles of the wild form, Erianthus, produced viable seeds, and these may have been self-fertilized. Twenty years later Wilbrink obtained 30 seedlings from the cross S. officinarum×E. elegans (Jesw.) Ruemke, and subsequently Jeswiet repeated this cross but without success. Ruemke in 1927 and 1928 crossed sugarcane, EK-28, with E. sara (Roxb.) Ruemke and obtained several hundred hybrid seedlings, the somatic chromosomes of which are less than the sum of the haploid number of the parents. The reciprocal cross, Erianthus x sugarcane, was a failure, the plants thus obtained being due to self-pollination. Barke in Queensland in 1932 obtained 24 seedlings by crossing S. officinarum and S. spontaneum with "a species of Erianthus", no details being given to indicate whether the seedlings were actually hybrids.

Interest has been stimulated in the intergeneric crosses with sugarcane by the undoubted success of Venkatraman in producing hybrids in 1929 by fertilizing sugarcane flowers, variety P. O. J. 2725, with pollen of a grain sorghum, Sorghum durra Stapf. Individuals of the resultant progenies are characterized by wide variation in habit, vigor, and other characters, but morphological studies supported by

cytological evidence, together with the fact that the female parent is regarded as self-sterile, leave no room for doubting that the thousands of seedlings thus produced are intergeneric hybrids. The same investigator has also succeeded in backcrossing the hybrids, using as father the same variety of sorghum.

Object of the Experiments

The pursuit of knowledge and the hope that such researches may eventually lead to production of crop plants of economic importance



FIGURE 70.—Hybrid of sugarcane X sorgo in flower. In 16 years' experience the true sugarcane has not been known to flower in the greenhouses at Washington (latitude 38°55' N), but this hybrid produced inflorescenses there the first year. The flowers were infertile.

the double stimulus which prompts the attempts to secure and study these hybrids. expenditure of effort and money in crossing the large thick-stemmed. tropical sugarcanes with the slender, unprepossessing wild cane Saccharum spontaneum has already paid enormous dividends. In the hands of expert plant breeders interspecific hybrids of this parentage, endowed with resistance to devastating diseases and superior in yield to the larger parent, have been obtained. As yet the commercial value of the intergeneric hybrids is little known, but certain considerations, which bring out the logic behind these efforts, will make clear that hybridization with genera that are remote from S. officinarum is fully justified. Earlier maturity of sugarcane in countries where there is danger of frost damage is greatly desired. The advantage would be mainly to lengthen the period of harvest and grinding at the mill, and keeping the mill in operation longer by starting the campaign at an earlier date would obviously reduce the cost of fabricating sugar. ghum, while deficient in cane sugar, matures in little more than half the time required by sugarcane. Compared with 9 or 10 months as a minimum for cane, a few of the sugarcane-sorghum hybrids made by Venkatraman are said to mature in 5 or 6 months and yield satisfactory juices high in sugar. They have been disappointingly low in tonnage per acre, however, and improvement in this respect is being sought.

Looking toward plants of earlier maturity for Louisiana, Florida, and other Gulf States, the Bureau of Plant Industry succeeded in

crossing the sugarcane variety P. O. J. 2725 with the grain sorghum Red Durra, and the sugarcane variety I-1081 with Honey, a variety of sorgo, or sweet sorghum, in the fall of 1933. Of the 100 seedlings some have many of the characteristics of sugarcane, but show their sorgo parentage in the long and deep bud grooves, exposed roots of the "flying-buttress" type just above the ground surface, undulating leaf margins, and other gross characters, as well as in the chromosome number, intermediate between those of the parents (fig. 70).

Using the method of emasculating sorghum flowers with hot water, devised by J. C. Stevens and J. R. Quinby, of the Bureau of Plant Industry, the reciprocal cross, sorghum by a pollen-fertile variety of

sugarcane, was attempted, but no viable seed was obtained.

The crossing was done at the United States Sugar Plant Field Station, Canal Point, Fla., and is being continued both in Florida and at the United States Sugar Plant Field Laboratory near Guayana, Puerto Rico. The difficulties involved in obtaining plants that meet all requirements are very great, and doubtless years of painstaking effort will be needed before any answer can be had as to the practical possibilities of this method of breeding. No plants are available in excess of the needs of the Bureau.

E. W. Brandes, Bureau of Plant Industry.

TILLAGE Machinery Laboratory Expected to Yield Valuable Data The development of farm machinery and tillage methods in the past has been largely through empirical methods. The basic relationship between

soil types, machine design and operation, and crop production was not known. The difficulties encountered in handling soils in many areas, such as the Black Belt of Alabama and Mississippi, where the topography is well adapted for cultivation with standard-sized machines, resulted in the abandonment of portions of these areas in favor of the eroded and impoverished hill areas, where soils are more easily tilled. There are few plows which will work satisfactorily in waxy, heavy clay soils, which will shed and scour in "push" soils, or will

withstand the abrasion of gravelly soils.

In all studies thus far made of tillage machinery under field conditions there have been variables which could not be controlled by the investigators. For instance, it has been impossible to control the soil moisture or to duplicate exactly any set of conditions. The accuracy of field work has also been handicapped by reason of the fact that the testing equipment used had to be supported by the soil under test, resulting in uncontrollable errors. These handicaps to the proper scientific study of the manifold problems connected with tillage have long been recognized. It was realized that the answer to many tillage-machinery problems could not be found unless the studies were made where soil conditions were within the control of the investigator.

To meet this long-felt need a farm-tillage machinery laboratory has been constructed at Auburn, Ala., with funds furnished by the Public Works Administration. The plant consists of 9 soil bins each 250 feet long, 20 feet wide, and 2 feet deep, 2 of the bins being divided in the center. The bins are separated by concrete walls on which are placed rails which support the testing equipment. The testing equipment includes a power car propelled by a 130-horsepower engine, which will make possible the operation of tillage machinery at speeds

of from 0.2 to 10 miles per hour. Supplementary equipment is avail-

able for other testing and for fitting the soil.

The soil bins will be filled with 11 distinct types of surface soils of major agricultural importance and which represent progressive steps in variation of the constants of soil classification. These range from sand to tight clay, both new and highly weathered soils. Consequently the results of the tests will have wide application and by proper interpretation will make basic information available to every section of the United States.

The equipment for the laboratory will make it possible to vary the soil conditions in any way desired by the investigators. The soil can be supplied with artificial rainfall or protected from the natural rainfall as desired, thus varying the soil moisture or maintaining a uniform moisture to meet the requirements of the tests.

Plows to be Studied First

The work will be conducted cooperatively with the Alabama Agricultural Experiment Station. The first investigation to be undertaken will deal with plows. The tests will be designed to determine accurately the effects of speed, depth of plowing, width of cut, soil type, soil-moisture condition, and soil compaction upon the draft, and the action upon the furrow slice in throw, inversion, pulverization, and coverage, of a plow bottom. Several types of plow bottoms will be used to determine the effects of shape or type and size of bottom upon the above factors. The data thus obtained will be supplemented by other investigations on the action of plow bottoms due to their shape, by studies of the essential characteristics of various metals used for plow bottoms, and by studies of a measure of tilth based on its relationship to plant growth. The combined results of these studies will provide a basis for the design and development of plows which will operate efficiently and satisfactorily under the conditions for which they are intended.

Similar information will be obtained relating to other tillage machinery, and the results will be available for use in the design of improved equipment for cultivation and for the economical control of weeds. Facilities will likewise be available for studies of the rolling resistance of wheels and traction of tractor wheels, covering the complete range of soil conditions that may be encountered. The results obtained should provide a basis for determining the width of tread and size of wheels which will have the lowest rolling resistance for given conditions and for developing traction equipment which will give a tractor

maximum efficiency.

The ultimate purpose of the farm-tillage machinery laboratory is to obtain basic data for use in the development of equipment that will meet the requirements for which it was designed. It is expected that implement manufacturers will take advantage of the facilities which the laboratory will afford to cooperate in investigations of fun-

damental machinery problems.

It has been estimated recently that 2½ billion horsepower-hours are used annually in plowing and listing alone, and the greater part of all farm power is expended in some form of tillage. If 10 cents be taken as the cost of 1 horsepower-hour the annual plowing and listing bill of the American farmers becomes \$250,000,000. Isolated field tests have demonstrated that with proper equipment and meth-

ods very considerable savings can be effected in the cost of power. Furthermore, crop field experiments show that better tillage methods increase crop yields. The farm-tillage machinery laboratory therefore offers opportunities to develop equipment which will reduce the cost of power on the farm and at the same time increase the yield per acre.

> J. W. RANDOLPH and I. F. REED. Bureau of Agricultural Engineering.

Natural Weed Fallow

OBACCO of High Quality Early settlers soon observed that Produced Following a virgin lands produced good vields of tobacco and a leaf having a finer texture and lighter body than that

grown on the older cultivated areas. It was chiefly this fact that led the early growers of tobacco constantly to clear new lands every few years until most of the land suitable for tobacco in the tobacco-producing areas had been brought into cultivation. It then became necessary for the grower to attempt to find other methods to produce a suitable product. Systematic crop rotation and the use of commerical fertilizers were tried as a means of securing a product of the desired yield and quality. These practices have not proved satisfactory on all soils and with all crop combinations.

It has recently been demonstrated that tobacco fertilized intelligently and grown after a natural weed fallow of sufficient duration possesses in a large measure those characteristics which are found in the crop grown on virgin land. The term "natural weed fallow" is here applied to areas which are not cropped for 1 or more years and are allowed to develop a spontaneous weed cover. When bare fallow was substituted for the weeds there was a rapid decline in the yield and quality of the tobacco after the first 2 or 3 years, as shown This fact illustrates that the weeds are the keystone in figure 71.

of the system.

While this system may not always be applicable where there are complicating diseases such as bacterial wilt and nematodes for which the prevailing weed growth furnishes host plants, it will be suitable over other large areas. There are also economic relations to be considered, such as the fact that there are some districts in which good tobacco soils are scarce and high priced; but the system can be used to advantage where the necessary land is available and where it is desired to produce leaf of the characteristics previously mentioned. must be remembered also that for some purposes of manufacture a thin, light-bodied leaf is not desired.

The general effect of the weed fallow is to promote a quick start and a rapid and uniform growth of the tobacco plants till maturity. The beneficial action of the natural weed fallow on the tobacco is reflected in a uniformly high market value per pound and value per acre for the crop. This in turn demonstrates that the product meets the current demands for manufacturing purposes, especially the production of cigarettes and pipe tobaccos. Intelligent fertilization of the crop and more extensive culture following natural weed fallow of sufficient duration should aid in solving the problem of keeping the



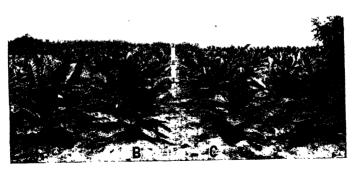




Figure 71.—4. Continuous tobacco, no cover crop, showing irregular and stunted growth; B, tobacco after 2-year bare fallow; C, tobacco after 1-year bare fallow; D, tobacco after 1-year weed fallow.

total production of tobacco within proper bounds and reducing the proportion of low-grade leaf in the crop.

JAMES E. McMurtrey, Bureau of Plant Industry.

RANSIT-REFRIGERATION Charges on Fruit Reduced by Recent Discoveries Fruit- and vegetable-producing areas in the far western States are peculiarly dependent upon specialized efficient and eco-

nomical means of transportation to get their crops to the consumer

in an attractive and marketable condition.

California ships annually upwards of 70,000 carloads of oranges. 15,000 of lemons, 2,500 of asparagus, 29,000 of cantaloups and other melons. 6,000 of carrots, 6,000 of cauliflower, 8,000 of celery, 50,000 of grapes, 35,000 of lettuce, 10,000 of peaches, 10,000 of pears, and 3,000 carloads of tomatoes, besides substantial quantities of practically every other fruit and vegetable found on the markets of this country. Roughly, 50 percent of the commercial apples of the country, or about 40,000 carloads, are produced in the Pacific Northwest, chiefly in the Yakima and Wenatchee districts of Washington, while the same area likewise ships about 8,000 carloads of pears and substantial quantities of berries, cherries, onions, potatoes, and other fruits and vegetables.

The development of fruit and vegetable production in these areas. and the prosperity and welfare of all the people engaged therein as well as of the communities supported by these industries, are based entirely upon the successful transportation of the produce to market. Furthermore, the constant and varied supply of fresh fruits and vegetables on the market has changed the dietary habits of the Nation. No longer are fruits and vegetables to be had only seasonally. Most of them are available from some producing area every month in the year, always in fresh, attractive condition, and usually at prices

within reach of the average consumer.

In the development of this vast industry and the tremendous business which it supports, refrigerated transportation has played a vital The successful application of transit refrigeration to the different products has been brought about in large measure through investigations of the Bureau of Plant Industry concerned with determining the proper stage of maturity at which to harvest and methods

of handling, packing, precooling, storage, and transportation.

In earlier years when prices were relatively higher and returns were good, emphasis was naturally placed upon the use of methods that would reduce to the minimum every hazard of spoilage and every condition that would adversely affect the appearance of the product, and would thus deliver only the highest quality goods to The successful shipment of oranges from California was the market. effected primarily by showing the industry how to control blue-mold decay by the use of careful handling methods and satisfactory transit refrigeration. The latter involved improvements in refrigerator-car design and construction and facilities for keeping the cars fully iced throughout the transcontinental trip. Later, methods of precooling were developed to reduce the temperature of the fruit quickly and thus still further to remove the hazard of decay, since blue mold does not make much growth at temperatures below 45° F. It is much more important to reduce the temperature of the fruit quickly and have it cold at the start of the journey than to deliver it at a relatively low temperature at the market.

Modifying Transit-Refrigeration Methods

Based on results of these earlier studies, some of the most recent investigations of the Bureau have been directed to the possibility of



FIGURE 72.—A railroad-car precooling plant showing method of connecting cold-air ducts to ice-bunker openings. Cold air is blown in at one end of the car and is returned to the refrigerating coils from the other end. The air is reversed periodically to provide uniform cooling. It requires about 8 hours to precool a carload of oranges, and at plants such as the one illustrated, at San Bernardino, Calif., an entire trainload can be handled at one time.

modifying transit-refrigeration methods. It has been found that instead of reiging orange shipments once every 24 hours, as was formerly the practice, only one reicing in transitis necessary, if the fruit is cold at the start. With this fact demonstrated, and the development of many details of procedure to cool the fruit without excessive cost, a reduction in the refrigeration rate was secured from the railroads which saves the industry \$30 to \$40 a car, or upwards of a million dollars annually. This saving may well mean the difference between profit and loss in fruit growing.

In all the recent investigations of the Bureau on transportation methods the primary objective has been similarly to develop every possible economy, and to reduce costs, while still delivering the produce to market in satisfactory condition. The most recent modification of shipping methods for California oranges, put into effect in August 1934, affords a saving of \$15 a car in the charge for precooling when no ice is used in transit. It was found that during the fall and spring

when the weather in the eastern part of the country is cool the only refrigeration needed for oranges is enough to keep them from warming up excessively while crossing the hot desert region of the Southwest. By blowing cold air at a temperature of about 25° F. through the loaded cars (fig. 72) for about 8 hours the temperature of the loaded fruit can be reduced to 40° or lower. Then the cars are closed tightly until after the desert region is crossed and the fruit is

satisfactorily protected during this hazardous part of the trip. Thereafter the ventilators are opened and advantage is taken of the cool outside air.

The shipment of pears from the Pacific Northwest offered other opnortunities for important modifications in refrigeration with substantial savings to the industry. Pears are far more exacting in their temperature requirements than are oranges, but it was found that when they are properly precooled the size of the carload could be increased from 520 boxes, which formerly was standard, to 640 or even 744, thus reducing the number of cars required to handle the crop and giving the railroads a greater revenue per car. Furthermore, since the cost of transit refrigeration is upon a carload basis, the heavier load resulted in a lower cost per box. The savings to the northwestern fruit industry by use of new methods developed in experimental work of the Department are conservatively estimated at more than a million dollars annually. Practically every kind of fruit and vegetable moving to domestic or overseas markets has similarly benefited in some manner from the Department's handling, transportation, and storage investigations.

> D. F. FISHER and C. W. MANN, Bureau of Plant Industry.

TUBERCULIN of Greater Purity and Efficiency Developed by Department The constant search for improved methods of producing biological products for livestock disease prevention and control, by scientists of

the Bureau of Animal Industry, has led to the production, from cultures on a new synthetic medium, of a tuberculin that is more efficient as a diagnostic agent than tuberculin produced by other methods. Prior to the development of the new tuberculin, the testing of cattle and other susceptible animals for tuberculosis was conducted with tuberculin made essentially in the same manner as the original product developed by Robert Koch more than 40 years ago.

Although tuberculin made according to the Koch method has given excellent results, it is not a perfect product. In some cases about 2 in 1,000 animals tested, it has been impossible to find lesions of tuberculosis in reacting cattle. In other cases, tuberculous cattle have failed to react to the first test. It was with the hope that facts might be developed that would lead to a reduction of this small percentage of

error that the investigations here discussed were undertaken.

The medium used for the Koch tuberculin consists of a clear broth, made from lean beef or veal, to which 1 percent of peptone, 4 to 7 per-

cent of glycerin, and 0.5 percent of salt are added.

This mixture is then inoculated with pure cultures of tubercle bacilli. The bacteria grow on the surface of the broth, forming a film or pellicle which gradually extends until it covers the entire surface. This

growth takes place over a period of about 2 months.

At the end of the growing period the broth cultures are sterilized, the dead bacteria are removed by filtration, and the clear, sterile filtrate is concentrated to the desired degree. A suitable preservative is then added. The final product, which is used in testing cattle, contains not only the soluble substances derived from the growth of the tubercle bacilli on broth but also any portions of the culture medium which

have not been used up during the growth of bacilli. It is generally recognized that the Koch or broth tuberculin is extremely complex. It always contains considerable quantities of unused glycerin. In addition there are unused nitrogenous substances derived from the beef as well as similar nitrogenous protein materials derived from the peptone which is added to the broth.

Synthetic Medium

The new synthetic medium developed by the Bureau for bovine tuberculosis contains no protein whatever. The nitrogen required by the bacteria for their growth is supplied by the pure, crystalline amino acid, asparagin, while the carbohydrate and mineral needs of the bacteria are furnished by pure glycerin, dextrose, magnesium sulphate, potassium phosphate, and derivatives of sodium and iron.

Since the active substance in any tuberculin is derived from the growth of the bacilli, the strength must depend primarily on the

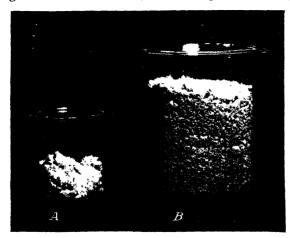


FIGURE 78—Comparative growth of tubercle bacilli obtained from 1,000 cubic centimeters of culture medium: A, Growth from broth medium; B, growth from synthetic medium.

amount of growth per 100 cubic centimeters of culture fluid, provided the bacteria are the same. Careful investigations weighings of tubercle bacilli have shown that, under favorable conditions, on the average 0.5 gram of bacilli, dry weight, may be obtained from 100 cubic centimeters of the ordinary glycerinated broth. The synthetic medium affords a vastly greater amount of growth. From each 100 cubic centimeters

of culture fluid there is obtained, at the height of the development, an average of 2 grams of tubercle bacilli, or approximately four times as much as is obtained from the same quantity of glycerinated broth medium (fig. 73). So far as known, no other synthetic culture medium for tubercle bacilli has afforded such abundant growth. As was to be expected from the greater growth of bacteria, tuberculin prepared from the synthetic-medium cultures was found, when tested on tuberculous guinea pigs, to be very much more potent than that derived from cultures on the broth medium.

Another advantage afforded by the use of the synthetic medium lies in the purity of the final product, that is, the tuberculin. As previously stated, the Koch, or broth tuberculin, always contains, as impurities, considerable unused residues of the culture medium. The newer tuberculin, on the other hand, is essentially a pure solution of the products of the tuberculosis bacillus. This result was attained by adjusting the constituents of the synthetic culture medium so that the bacteria use practically all of them. The final tuberculin contains only

products which are derived from the tubercle bacillus itself. Since the reaction of tuberculous cattle to tuberculin is caused only by the products of the tubercle bacillus, it is evident that the new tuberculin is much purer than the older product.

New Tuberculin More Effective in Tests

The real test of a biological product, however, is in the actual potency when applied to animals. More than 40,000 comparative tests of the old and new tuberculins have been made on cattle. In one series 13,288 cattle were tested simultaneously with both tuberculins by the intradermic method. Of these, 1,127 gave reactions (swellings at site of injection) to the broth tuberculin and 1,268 reacted to the new tuberculin. All these reactors were slaughtered and lesions of tuberculosis were found in 1,205. Every one of these reacted to the new tuberculin but 135 did not react to the old tuberculin. No tuberculous animal in the series reacted to the broth tuberculin without at the same time reacting to the new tuberculin. In the case of the cattle which reacted to both tuberculins, the great majority showed more pronounced and more clear-cut reactions to the new tuberculin.

Since the new tuberculin was thus proved to be more effective when used for diagnosis under practical field conditions, the Bureau discontinued the production of the old tuberculin in April 1934. In its place, the tuberculin produced from cultures on the new synthetic medium is now being used exclusively by the Bureau of Animal Industry in official tuberculosis-eradication work. This new tuberculin is produced in amount sufficient to test more than 18,000,000 cattle annually.

M. Dorset, Bureau of Animal Industry.

VEGETABLE Insects Can be Controlled Without Arsenical-Residue Hazard The control of insects that attack vegetables and small fruits by means that will not leave harmful residues on the marketed product

has continued to receive the attention of the Department. The work of the previous year has been intensified and broadened in scope, and on the basis of this research a mimeographed circular has been issued containing revised recommendations for the control of a number of important pests of these crops. These recommendations emphatically provide that arsenicals or other poisons should not be used after the appearance on the plant of fruit or foliage that would be sent to market or consumed, except in cases in which washing or stripping would remove all harmful residues. In addition to stressing the importance of employing insecticides that do not incur the hazard of harmful residues, special emphasis is given to the time and method of applying insecticides, and supplementary control measures, such as field sanitation and cultural practices, particularly the thorough destruction or utilization of crop remnants after harvest, are recommended.

In this search for substitutes for arsenicals and other means of eliminating harmful residues, extensive experiments have been conducted in Ohio, Virginia, Florida, North Carolina, South Carolina, Louisiana, and California. These experiments have been concerned

chiefly with cabbage, and in general, the results have substantiated those obtained during previous seasons, to the effect that arsenicals and similar inorganic insecticides may be applied to this crop up to within 40 days of harvest without danger of harmful residues remaining on the marketed product. This means that cabbage may be treated with arsenicals before the plant begins to form a head, since all leaves which develop prior to that time have dried or are discarded at the time of harvest.

Use of Derris Combinations

These studies have indicated that derris-root powder containing from 0.5 to 1 percent of rotenone mixed with talc or tobacco dust as a diluent is effective in controlling the common species of cabbage worms. In general, the pyrethrum-dust mixtures and hellebore have been less effective than the derris combinations. The number of treatments and the cost involved in obtaining cabbage-worm control with derris combinations on a commercial basis have not yet been determined for application under the diverse conditions existing in the different parts of the country where cabbage is an important crop. A dust mixture composed of 1 part of paris green and 9 parts of hydrated lime is effective against the common species of cabbage worms, but its use is limited to the early stages of the plant growth, when there will be no danger of harmful residue.

The Department has not had an opportunity to conduct any extensive experiments on the control of cabbage pests on cauliflower, broccoli, kale, or collards in order to determine the possible utility of arsenical substitutes. It is believed, however, that the compounds containing rotenone and pyrethrum should give approximately the same results on these crops as when used on cabbage. There should be little or no danger in the treatment of these crops with arsenicals when they are in the seedling stage. The leaves surrounding the heads of cauliflower are often used for food, and the treatment of the crop should be so regulated that these leaves do not bear any harmful residue. Especial precautions should be exercised in the use of arsenicals or other poisonous materials on broccoli, since the nature of the edible portion of this plant is such that residues are retained for a considerable length of time and there is little likelihood that they will be removed by washing or stripping. Since fields of harvested cabbage and other cole crops serve as sources of infestation to new plantings, particularly in the South, crop remnants should be destroyed or utilized.

Rotenone Effective in Bean Beetle Control

Extensive tests in Ohio and Virginia during 1934 have indicated that the Mexican bean beetle can be controlled effectively, without danger of arsenical residue, by the application of derris sprays or dusts. These sprays or dusts gave excellent foliage protection and increased the yield markedly over that of the untreated plots. In general, a better quality of control has been obtained with the derrisroot sprays than with the derris dusts. The derris-root spray was prepared at the rate of 1½ to 2½ pounds of finely ground derris root, containing 4 percent rotenone per 50 gallons of water (equivalent to 0.015 to 0.025 percent rotenone in the spray mixture), with appropriate adjustments for varying rotenone content of the derris root. Cryolite

at the rate of 3 pounds to 50 gallons of water has given results equal to those from magnesium arsenate at the rate of 2 pounds to 50 gallons of water, when applied properly. The derris-dust mixtures contained from 0.5 to 0.75 percent of rotenone with talc, tobacco dust, or ground marc as a diluent.

Tests with the celery leaf tier have shown that compounds containing rotenone are not effective against this insect and that pyrethrum

is apparently a specific poison for the pest.

Damage by the pepper weevil has been materially reduced in some areas, especially in California, by the destruction of nightshade, the principal winter host plant of this insect. No insecticidal treatment for the control of this pest has yet been devised which does not involve an undue risk of harmful residue remaining on the market product.

Studies in the control of melon and pickle worms on fall-grown squash in South Carolina have indicated that a derris-root powder containing from 0.5 to 1.5 percent of rotenone is effective against these insects, and a profitable return from the crop has been attained even under conditions that render necessary several treatments at intervals of from 7 to 10 days. Sulphur appears to be an effective diluent for derris-root powder when employed against these pests, and the addition of from 10 to 25 percent of talc or clay, by weight, improves the dusting qualities of the mixture. Cryolite and paris green are effective, and there is no danger of harmful residues when they are applied prior to the formation of the fruits. Calcium arsenate has not proved satisfactory in the control of these insects.

In tests against the turnip aphid in the South, derris-root powder containing 1 percent of rotenone with equal parts of finely ground tobacco dust and sulphur as diluents gave good results, even under the relatively low temperatures prevailing when this pest is most

numerous.

Preliminary tests indicated that compounds containing rotenone are effective against the harlequin bug a common pest of many of the important vegetable crops.

Unsatisfactory Results against Tomato Hornworm

Unsatisfactory results were obtained with compounds containing derris or pyrethrum when directed against the tomato hornworm, which was unusually abundant in certain sections of the East during the past season. Fall plowing is an effective aid in the control of this pest.

As a result of extensive esperiments in the State of Washington, it was shown that sprays containing approximately 0.01 percent of rotenone were effective against the raspberry fruit worm, particularly when they were applied after the blooms appeared on the plants, supplemented by a spray containing arsenicals prior to the development of the blossoms. With this procedure no harmful residues were left on the harvested berries.

Injury by the strawberry weevil can be lessened by burning over its hibernating areas. Since such burning is necessary only over areas within 100 feet of strawberry fields and can be conducted during the

winter, this method has a very practical application.

D. J. CAFFREY, Bureau of Entomology and Plant Quarantine. ITAMIN A Value of Plant Feeds Fully Accounted for by Their Carotene Content In the preceding Yearbook of Agriculture, the writer reported experiments which showed that the health and productiveness of

cattle are very dependent on the quantity of vitamin A which they receive in their rations, that these animals usually receive most of their vitamin A in the roughage, and that their health and productiveness are, therefore, commonly dependent on the kind and quality of their roughage. Recent research in the Bureau of Dairy Industry and in other scientific laboratories now throws more light on the chemistry of vitamin A and its distribution in various farm feeds, and on certain important practical considerations regarding the relation between its chemistry and color and its appearance in milk and butter.

Vitamin A appears in the tissues of animals as a nearly colorless highly complex alcoholic compound associated with the fats. Plant tissues, on the other hand, contain several closely related yellow pigments called carotenes. These pigments are hydrocarbons, and are easily converted by animals into colorless vitamin A when consumed as a part of the food. So far, colorless vitamin A has not been found as a natural constituent of plant tissues, and a number of investigations, particularly a recent careful investigation in the Bureau of Dairy Industry on alfalfa hay, have indicated that this compound does not occur in plants, and that the vitamin A activity of plant feeds is wholly accounted for by their carotene content.

The vitamin A content of feeds has been determined in the past in time-consuming experiments involving the rate of growth of rats. Recently, however, fairly rapid and accurate direct chemical methods for the determination of carotene in plant tissues have been developed. As the carotene content of plant tissues is a measure of their vitamin A activity, this activity can now be more quickly and accurately determined in plant tissues by carotene determinations than by the older

form of feeding experiments with rats.

Carotene Content of Farm Feeds

Carotene determinations made on the alfalfa plant show that the fresh green plant material cut in the bloom stage is a very rich source of this pigment. When this material is dried and cured for the purpose of making hay a large proportion of its carotene is destroyed, the amount of destruction depending on when the hav is cut and how it is Hay cut in the bloom stage or earlier and cured without exposure to rain or to too much sunshine retains a considerable proportion of its green color and of its carotene content; hay cut in the seed stage or exposed to rain, or for many days to the sun, loses most of both color and carotene. Carotene determinations on a few farm feeds give a general view of the situation, though they are not yet numerous enough to be regarded as reliable averages. The comparatively few results reported in table 13 show that the carotene content, even of a given feed, varies considerably, but that there tend to be very large and more or less characteristic differences between different feeds. The grades of alfalfa and timothy hay given in the table are the standard United States grades which have been described in detail by the Bureau of Agricultural Economics, and the grading of which depends on color, and, in the case of alfalfa, also on leafiness. The No. 1 grade is that which has the most leaves and the most intense green color.

Table 13.—The carotene content of certain farm feeds, given as milligrams per gram of dry matter in the feed. The vater content of the feeds is given in order that their original carotene content may be calculated

Feed	Deter- mina-	Water		ene per gram of dry matter		
	tions	.,	High	Average		
Fresh green alfalfa. U. S. No. 1 alfalfa hay. U. S. No. 2 alfalfa hay. U. S. No. 3 alfalfa hay. U. S. No. 3 alfalfa hay. U. S. No. 1 timothy hay. U. S. No. 2 timothy hay. U. S. No. 3 timothy hay. U. S. No. 3 timothy hay. Fresh green Kentucky bluegrass. Fresh green corn plant; cut, for ensiling. Corn fodder, old and dry. Corn silage. Wheat straw. Corn: ripe grain, yellow dent, and flint. Carrots: yellow, garden.	2231225281	Percent 79.6 8.6 8.6 8.6 11.6 11.6 11.7 11.6 75.1 9.9 9.8 8.4 11.3 88.3	Milli- grams 0.412 .117 .016 .012 .024 .011 .620 .115 .006 .060 .010 1.128	Milli- grams 0.267 0.34 014 001 009	Milli- grams 0.326 0.45 015 007 019 008 006 522 092 004 039	

Relation of Butter Color and Vitamin A

Cows fed on ordinary farm feeds consisting of plant materials depend on the carotene content of the feed for the vitamin A activity of their milk and butter. A part of the carotene of the feed appears as such in the milk fat; another part is converted into colorless vitamin A and appears in the butter as this compound. When the cow is fed on materials low in carotene, the carotene and colorless vitamin A of the milk fat become gradually less and less; the total vitamin A activity of the butter may be 20 times as great on feeds high in carotene as on feeds low in carotene.

The carotenes are the only yellow plant pigments which appear in milk fat in considerable amounts; hence the natural yellow color of cream and butter is due almost entirely to the carotene content. It is an important practical question how far this yellow color is a measure There are congeniof the vitamin A activity of these dairy products. tal differences between the colors of milk fat secreted by different breeds of cows. Guernseys and Jerseys, for instance, secrete milk fat which has a higher yellow color than that of Holsteins and Ayrshires on the same feed. Experiments have shown that those breeds which secrete the fat with the higher yellow color tend to put more carotene and less colorless vitamin A into the fat than the others, so that the higher colored milk fat of Guernseys is not likely to have any greater total vitamin A activity than the lower colored milk fat of Holsteins. as long as the two breeds are kept on the same kind of feed. The vellow color of milk fat is, therefore, not a good index of the vitamin A activity when the fat of different breeds on the same feed is compared.

But the differences in butter color which can be produced by different kinds of feed are much larger than those which occur among different breeds on the same feed. The butter color of a given breed of cow is rarely as much as twice that of another breed on the same feed, whereas it is easy to reduce the butter color of an individual cow of any breed to less than one-tenth of the original level by changing her from good pasture to a ration of grain and U.S. No.3 timothy hay. Changes in yellow color so caused are accompanied by roughly proportional

changes in vitamin A activity. As the changes in butter color produced by feed changes, and also the accompanying changes in vitamin A activity, are so much larger than the breed differences which are not an index of vitamin A activity, the natural yellow color of the milk fat is, in general, a fairly good rough index of its vitamin A activity.

Edward B. Meigs, Bureau of Dairy Industry.

ATERFOWL Breeding Grounds of Far North Now Poorly Tenanted While everything possible is being done to restore unwisely drained and cultivated areas in the United States to waterfowl, it must not be

forgotten that far to the north there are extensive nurseries to which an adequate breeding stock of the birds must annually be returned.

Investigations conducted by the Bureau of Biological Survey afford many specific instances of excellent breeding grounds that are poorly tenanted, and indicate that this condition prevails over immense areas. The breeding population is relatively sparse over the Canadian and Alaskan ranges of several species of waterfowl that are important by reason of their former abundance and their wide distribution in the United States during their migrating and wintering. Observers of the southward waterfowl flight of 1934 reported the returning flocks from northern nesting grounds as the smallest on record.

Sportsmen and naturalists in the fall of that year were prepared to expect only meager returns from the few nesting grounds that still remain in the drought-parched areas of our northern plains, both in the United States and the Prairie Provinces; but farther north there are still suitable breeding grounds that afford hope for the future—if an

adequate seed stock is maintained.

Beyond the northern boundary of the section most affected by the great drought—a curving line that crosses central Canada between Lake Winnipeg and the Rocky Mountains, an area stretching from Hudson Bay to the Rockies and from the Saskatchewan Valley north to the Arctic Ocean—lies a region aggregating upwards of a million and a half square miles that would seem to have been prepared by Nature especially for a waterfowl nursery. Its inherent productivity is the result of a series of great geologic and climatic processes, the most important of which were exerted by the vast ice fields of the glacial period and the readjustments that followed their disappearance. Practically the entire area was then ground and scoured, violent shifts of the soil took place, the drainage systems underwent drastic changes, and myriads of new lakes were formed.

After the recession of the ice many thousands of years passed while Nature clothed the bare rocks with lichens and mosses, fertilized the sterile soil with the products of decayed vegetation, and finally covered the terrain with forests and lesser plants. Through the slow process of encroachment by vegetation, thousands of lakes became marshes and eventually solid ground. Other thousands are still in the process of

being filled.

The lichens and mosses, which have so effective a role in first clothing a newly born land, still form an important part of the vegetative cover and make much of the area a vast sponge that receives moisture avidly, but dispenses it with reluctance. Other classes of plants, spread by wind and water and encouraged by the almost con-

tinuous sunlight of the long summers, have helped through the ages to build up a varied and prolific invertebrate and vertebrate fauna, a teeming biota whose members are mutually interdependent. Of this great aggregation the waterfowl are a part.

Vast Number of Lakes and Marshes

Over this vast area of a million and a half square miles, the lakes probably average one to the mile, despite the fact that a few are 200 or 300 miles long. Thus, by a conservative estimate, there are in this region more than a million lakes and marshes virtually unmodified by man's presence, where drought is unknown, and where the food and shelter for waterfowl are ample. Distribution and migration studies show that a large proportion of the waterfowl species most important to wildfowlers not only of the Mississippi Valley but also of both the Pacific- and Atlantic-coast regions, nest naturally in this great area.

From November to mid-April this region is fast frozen, but with the melting of the snow and ice the eager waterfowl return to their ancestral homes there, the earliest following closely the retreating ice. Among the first are the swans, which subsist largely at this season on the roots of the broadleaved cattail (Typha latifolia). Shortly afterward follow the Canada goose (Branta canadensis), the snow goose (Chen hyperborea), Ross's goose (C. rossii), and the white-fronted goose (Anser albifrons). All these gather at first in the larger marshes and the deltas, where they rest and feed on the sprouting heads and the roots of Equisetum, locally called goosegrass, a very abundant plant. Later these geese, as they work their way northward, have recourse to the overwintered berries of a number of trailing upland shrubs, whose fruit is available in spring, when some of the waters are still icebound.

With the geese come ducks of more than a dozen species, and these seek first the larvae, and probably the eggs, of toads and frogs, and the snails of two genera, Limnaea and Planorbis, that develop by myriads in the waters. Insect life is enormously abundant, and the larval forms of those that develop in the water are especially important. These include May flies (Ephemeridae, both nymphs and adults); dragonflies (nymphs); water bugs and water beetles; and the young of many other smaller insects. Even the thronging larvae of mosquitoes are eaten by the young ducks. As the season progresses the marshes are filled with many plants that furnish food and shelter, including the large reed Phragmites phragmites, sedges (Carex utriculata and C. aquatilis), great bulrush (Scirpus lacustris), common pondweed (Potamogeton natlans), fennel-leaved pondweed (P. pectinatus), whitestemmed pondweed (P. praelongus), clasping-leaved pondweed (P. perfoliatus), and northern pondweed (P. alpinus). Sweet flag (Acorus calamus), yellow pond lily (Nymphaea advena), water persicaria (Polygonum amphibium) and other smartweeds, and the broad-leaved sagittaria (Sagittaria latifolia) also abound in suitable places.

That this great region no longer harbors a reasonable share of the teeming waterfowl population that bred there in the early days is most discouraging to conservationists. Old residents testify to a reduction of 75 percent in the past 20 years. Today, with no change in the physical environment, and with a food supply that would still suffice for the former unparalleled wealth of bird life, these myriad swamps and lakes are occupied by scarcely a tenth of their potential waterfowl

population. We have not yet exterminated any of the thirty-odd species that formerly graced this great waterfowl paradise, but we have allowed several of our most beautiful and useful species to be reduced

to a pitiful remnant.

Although about 75 percent of the waterfowl shot in North America are taken in the United States, an overwhelming majority of these birds (about 85 percent) are produced in Canada and Alaska, and if the time ever comes when certain of the species are no longer represented in the flocks that come from the far-northern breeding grounds, we shall know that they are gone forever. We have already lost the Labrador duck and several other North American birds whose tremendous populations seemed to early observers to insure their perpetuation, and it is none too soon to take thought of the danger suggested by the rapid diminution of any species that is subject to special pursuit.

The Lesson of the Passenger Pigeon

The folly of relying alone on the presence of extensive breeding areas to perpetuate a threatened species is well illustrated by the story of the extermination of the passenger pigeon. In 1860 a legislative committee of Ohio declared:

The passenger pigeon needs no protection. Wonderfully prolific, having the vast forests of the north as its breeding grounds, traveling hundreds of miles in search of food, it is here today and elsewhere tomorrow and no ordinary destruction can lessen them.

Ten years later this pigeon, which was numbered among the millions in the memory of many people now living, had become scarce. Within 30 years it was practically extinct, and the last known representative

of its race died in a zoological park 20 years ago.

It is well, therefore, before it is too late, that we be warned by the rapid diminution of several of our waterfowl species, the numbers of which a generation ago recall today the scoffings of the last century regarding the passenger pigeon. Unless we take care of the stock that is needed to bring back to its maximum productivity the great northern breeding grounds of the wildfowl, our efforts to restore this great resource by other means will bear but small and bitter fruit, for we shall be without the breeding stock to populate these ancestral grounds.

If, on the other hand, the nature-minded people of North America really wish it, the waterfowl paradise of the North can again welcome to its marshes the hordes that were the wonder of former times. To this end, it is necessary to spare and send back each spring to these fertile nesting grounds a yearly increasing stock of the beautiful species

that still carry on there.

Edward A. Preble, Bureau of Biological Survey.

ATERFOWL Problems
Clarified by Study
of Gunning Practices

With the alarming decrease in waterfowl numbers in North America in recent years, sportsmen and conservationists have been faced with

a problem of national importance. The Bureau of Biological Survey, charged by the Migratory Bird Treaty Act with the custodianship of the waterfowl while they are in the United States, has made extensive

studies of the factors affecting the birds. Investigators have obtained essential data on breeding conditions, on natural enemies, and on the potential resources of the waterfowl; also they have studied modern gunning practices.

The destructiveness of any modern hunting method is not so serious when considered alone, but when the various devices and practices are used in combination, they are capable of great abuse. The battery, sinkbox, decoy, scull boat, and repeating gun all become much

more deadly when used with bait, for instance.

The baiting practice is vigorously condemned by many and highly praised by others, but this divergence of opinion may be somewhat clarified by pointing out that "baiting" refers specifically to the use of artificial food to attract birds to be killed, whereas "feeding" is the provision of artificial food for all other purposes. Baiting was thus not developed through any altruistic spirit to help waterfowl but to facilitate the killing of birds. The bait (usually grain, such as corn or wheat) is commonly placed within gunshot of blinds, though the methods vary somewhat in different sections of the country. The period of baiting also varies somewhat, but in most areas it covers slightly more than the gunning season and often ceases when the most inclement weather develops—when there is the greatest need for extra food. Only comparatively few of the better clubs continue to feed as long as there are birds left, or until spring migration starts.

Bait probably gives the average gunner a 100-percent advantage, and members of clubs that bait may have fair success in their shooting even though few birds are in the general section. Baiting concentrates the waterfowl in a limited area and quickly tames the birds.

By holding birds in an area where natural conditions would not favor them, baiting, to some extent at least, prevents migration. In an area subject to severe winter freezing this may result in serious losses after the close of the gunning season, when from the standpoint

of shooting there is no further occasion for feeding.

In rare cases some advantages accrue from baiting; for instance where a club with large and well-protected holdings reduces the kill that would otherwise occur if the property were open to public shooting. A number of large clubs where baiting is carried on but where only moderate or little gunning is done may serve almost as sanctuaries at private expense. On a few of these, more birds are produced than are killed. It is regrettable that such cases cannot be considered representative of the average club that baits.

Serious Evils From Use of Repeating Guns

Some serious evils of gunning are sometimes brought about through the use of automatic and pump guns, which throughout the country appear to be used more commonly than either the double- or singlebarreled gun. The objections to the repeating guns are that in the hands of good shots they facilitate slaughter, and in the hands of less experienced shooters they produce a tremendous amount of crippling. The hunter using a repeating gun is tempted to depend too much upon a barrage of fire in the direction of a flock without taking time to single out his bird. Consequently the standard of accuracy is lowered and the percentage of cripples enormously increased. It rarely happens that one can get more than two shots while the birds are within effective range.

Decoys are used in varying numbers and in many different ways in various parts of the country. Like other methods of gunning their use has greater application as the birds decrease, and there is no question that in most sections they greatly facilitate gunning and increase the kill of birds. Where decoys are used, it is not uncommon to see

the ducks alight within a few feet of a blind.

Battery shooting is one of the most criticized methods of gunning. It is used mainly in taking diving ducks in broad waters where the birds cannot be gotten at from shore. Under favorable conditions battery shooting may be deadly. Under Federal regulation it is permitted only in coastal waters. The battery is usually set out with decoys and is generally placed over a baited area or over a natural feeding ground or in a flight lane. When placed near the shore, the battery generally ruins the shooting for gunners on shore. Like the scull boat, it tends to keep the birds continually stirred up, which prevents their resting or feeding. Because batteries are so easily and quickly moved, it is difficult to regulate their number or position on a body of water.

A marked difference may be noted in gunning methods in various sections of the country. Usually the greatest refinements in technic and methods of gunning are found in sections where the birds are Methods of gunning for migrants and winter residents are often vastly different because of the varying nature and habits of the birds under their several conditions. The blinds used are of a wide variety, some being temporary affairs hastily built, while others are

elaborate, costly, and permanent.

Often, as would be expected, hunting methods vary, depending upon the species, or in the case of a single species, the type of environment. Some of the practices involved are highly technical and require great judgment and experience on the part of the gunner, while others require little more than ability to pull the trigger.

CLARENCE COTTAM. Bureau of Biological Survey.

▼ JATERFOWL-RESTORATION Early in 1934 the Secretary Program Undertaken of Agriculture, by direction by the Government of the President, appointed

the President's Committee

on Wildlife Restoration to study wildlife problems with particular emphasis upon measures to rehabilitate the rapidly vanishing waterfowl population. This committee—Thomas Beck, chairman, J. N. Darling, and Aldo Leopold-made a thorough canvass of all aspects of the situation, studied a mass of material previously assembled by the Bureau of Biological Survey, and presented a report. Shortly thereafter, under the leadership of Mr. Darling, the Bureau of Biological Survey undertook a national program of waterfowl restoration.

Being in accord with the Administration's policy for the removal of submarginal agricultural land from crop production, the refuge-acquisition program has been in part financed by a substantial sum allotted from emergency appropriations. The drought-relief measure has also furnished funds with which to acquire in drought areas land that is suitable for wildlife, and an Executive order of May 28, 1934, made directly available to the Biological Survey an additional million

dollars with which to carry forward the program. Altogether, funds for the acquisition of land for migratory-bird refuges amount to \$6,000,000, supplemented by \$2,500,000 for refuge development. With these resources and the data previously assembled by the Biological Survey regarding desirable refuge sites, the Bureau was able to move immediately toward the fulfillment of the wildlife-restora-

tion program. Since the main objective of this program is a more abundant waterfowl population, it has obviously been necessary to consider first the control and improvement of conditions conducive to the production of the various species. Consequently, the Biological Survey concentrated its initial efforts on the breeding areas within the boundaries of the United States, the most important of which extend from the Great Lakes area to eastern Montana, and from the Canadian border southward. Consideration was also early given to several major projects in the Northwest, in the coastal section of North Carolina, and in the White River Bottoms, Ark. Tremendous handicaps surround the purchase of lands of the character desired for refuge purposes, which in about 80 percent of the cases are complicated by earlier drainage operations or by other incumbrances. In spite of these obstacles in the way of prompt and equitable acquisitions, approximately 550,000 acres in 28 units had by March 31 been taken under contracts of purchase, and about 100,000 acres were being taken by judicial proceedings, several million additional acres were in

Refuges in Major Waterfowl Flyways

prospect.

The program contemplates ultimately a series of major refuges extending through the four major waterfowl flyways from the Canadian boundary to the southern limits of the United States. Most of these refuges will contain not less than 20,000 acres each, and some will be much more extensive. So far as physical conditions permit, these large refuges will be approximately 300 miles apart, and will be supplemented by less extensive sanctuaries. Because nesting places play a role of vital importance in any well-considered rehabilitation program, there will be a concentration of refuges for that purpose in the northern reaches of the United States. An extensive system of resting and feeding areas also will be provided on the migration routes and on the wintering grounds.

Mere acquisition of the land and water embraced within the areas selected will, however, not suffice to realize the purpose of the restoration program. Many of the waterfowl concentration areas have been destroyed by drought and by drainage operations or have been so reduced as to offer only the most meager attractions to the birds. A major problem, therefore, is the restoration of an environment that will once more attract them. Such work is being undertaken on every one of the projects selected for this program in the nesting area. For the most part the improvement will be the removal of drainage devices previously installed and the construction of dikes, dams, and water-control works, to impound and stabilize the waters that normally flow into these areas.

RUDOLPH DIEFFENBACH, Bureau of Biological Survey.

Pest Control Aid Citrus Growers of California

TEATHER Forecasts for California's citrus crop has returned to the State as much as \$135.-000,000 in a single year. Its delivered value in the wholesale mar-

kets has been as much as \$167,000,000. Large as these returns appear. they are offset to a large extent by the heavy costs of production. Weather conditions play a very important part in the growing of the crop. Freezes in winter, unseasonably high temperatures in spring and summer, desert winds with extremely low humidity, and sometimes long-continued periods of rainy or foggy weather, all may seriously damage trees or crops. The California citrus grower probably is more "weather conscious" than any other producer of agricultural products.

California citrus growers do not suffer losses from adverse weather without a fight. Miles of windbreaks protect the groves in the windy districts from the full effects of heavy winds, and orchard heating for the protection of trees and fruit from the winter freezes has reached

its highest development here.

Only the grower who keeps his grove in the best possible condition can get the largest return on his investment. Pest control is one of the most necessary of all orchard practices, and also is one of the major items in the expense of growing citrus crops. The total acre treatments per year in southern California alone are in the neighborhood of 125,000 and cost the growers approximately \$3,000,000. An additional \$3,000,000 is the estimated annual loss through damage to crops by pests in groves not treated, or treated with unsatisfactory results.

Relation of Weather to Spraying and Dusting

Control of pests is accomplished by fumigating with hydrocyanic acid gas, spraying with various materials, or dusting the trees with finely divided sulphur. Any of these methods may cause damage to fruit and trees if applied during or immediately preceding periods of adverse weather. In the coastal area fumigation is not begun until the temperature drops to 70° to 80° F. in the evening and in the interior not until the temperature drops to 80° to 85° F. Fumigation is discontinued whenever the tents become damp with dew. heavy dropping of fruit also may occur if fumigation is done immediately before temperatures below freezing occur in the orchard, or before the onset of strong east winds from the interior, accompanied by excessively low humidities.

The degree of spray injury due to adverse weather depends on the spray material used, but excessively high temperatures or low relative humidities during or immediately following spray application in southern California citrus districts cause damage no matter what material is used. Some spray materials formerly used rather extensively in citrus groves have been eliminated almost entirely because of danger of weather injury. Definite data on which to base the limits of safety with regard to both temperature and humidity for various spray materials are not yet available, but the establishment of a number of temperature- and humidity-recording stations throughout the southern California citrus districts undoubtedly will bring this question much nearer to a solution.

The present policy is to stop all spraying with oil when the temperature is expected to rise above 100° F. or the relative humidity to fall below 20 percent within 2 days. Lime-sulphur sprays are considered more dangerous in southern California, and their use is discontinued in that area when temperatures above 90° F. or relative humidities below 25 percent are in prospect. Damage caused by spraying with oil following the application of sulphur dust, in extreme cases as long as 2 months previously, often is intensified by high temperatures. Some lemon groves which received sulphur dust followed 2 weeks later by oil spray during the summer of 1934 lost in excess of 65 percent of their fruit and also suffered severe damage to foliage during the hot spell of July 25 to 27. Four or five days of favorable weather following treatment with sulphur dust or spray usually is enough to avoid danger, although injury has followed dusting even after two or three weeks in some cases.

Temperature Range for Sulphur Dusting

Results secured from sulphur dusting are doubly dependent on weather conditions. In order to control the pests for which it is applied, air temperatures must be high enough to cause fuming of the sulphur particles, but if the temperature rises too high, burning of fruit occurs. In this case also it is not possible to name definite temperature limits, but generally speaking, sufficient fuming for control will not take place at temperatures below 80° F., and damage is likely to begin at temperatures above 100°. Relative humidities below 25 percent increase the amount of damage at any given temperature.

The Weather Bureau during the summer of 1934 began issuing special pest-control weather forecasts from its station at Pomona for the benefit of citrus growers in five southern California counties. Invaluable cooperation in the project has been given by pest-control operators, county agricultural commissioners, and farm advisers, and the Citrus Experiment Station of the University of California at Riverside. Daily forecasts of maximum temperature and relative humidity for a 48-hour period are made for 7 different points in the 5 counties. This is necessary because of the wide differences in temperature and humidity within relatively short distances, owing to

differences in topography and distance from the ocean.

During the summer months changes in day temperatures in southern California citrus districts are due almost entirely to fluctuations in the strength of the sea breeze which blows inland from the Pacific Ocean. Any interference with the normal influx of cool air from the Pacific causes the land areas to heat up very rapidly; and conversely, a resumption of the normal sea breeze during the progress of a hot spell causes a rapid lowering of temperatures in the interior. The entire area is occupied throughout the summer period with marine air of high specific humidity, and relative humidity is always high except during periods of unusually high temperature. The forecasting of these summer hot spells is difficult because the balance between the forces causing the sea breeze and tose thending to oppose it is easily upset.

During the spring and fall months the forecasting of day temperature and humidity in this area is considerably less difficult, because atmospheric changes take place on a larger scale and are more positive in their action. During these periods the damp marine air over southwestern California is often replaced by much drier continental air, sometimes resulting in the relative humidity falling low enough to cause damage to crops with only moderate temperatures prevailing.

Forecasts Broadcast Daily

The forecasts are broadcast from radio station KNX at Hollywood, Calif., at 12.14 p.m. each day, a time requested by fruit growers and pest-control operators to allow them to listen during the noon luncheon period. They also are placed on the teletype circuit maintained by the California Fruit Growers Exchange about 11.40 a.m., and thus made available to all the field offices of that organization. Many telephone calls and a few personal calls for the forecast are made to the Pomona office at an earlier hour.

On receipt of a forecast of temperature or humidity conditions which might cause damage, pest-control operations are suspended until the conditions moderate. Sulphur-dusting operations are not begun during the spring months until a period of day temperatures above 80° F. is forecast, and operations are discontinued when temperatures above 100° or relative humidities below 20 percent are forecast. Periods with temperatures satisfactory for dusting work in spring sometimes occur only at long intervals and last only a few days. Utilization of the forecasts makes it possible to make all preparations for the application of the dust beforehand.

Information regarding humidity conditions is also utilized in determining at what time of night dew will begin to form on the trees. Fumigating is done at night and must be discontinued as soon as

moisture begins to form on fruit or foliage.

Forecasts Utilized by Walnut Growers

While these special forecasts were first requested by citrus growers, the walnut growers of southern California are making use of them in their harvesting operations. A sudden change to high day temperatures and low humidity during the harvest season causes the walnut hulls to dry rapidly and cling to the walnuts, preventing them from dropping to the ground. As a result the nuts hang in the trees too long and develop color in the kernel, causing a reduction in grade.

During cool, damp weather the speed of the harvest is often governed by artificial dehydration capacity. If the nuts are removed from the trees and left in sacks or bins under these conditions, they are likely to depreciate in condition rapidly due to heating and development of mold. At the beginning of a period of hot dry weather there may be large quantities of walnuts ready to be harvested, but still hanging on the trees because the dehydrator cannot handle them fast enough. On the receipt of a forecast of high temperature and low humidity, all the mature nuts on the trees are removed and stored until they can be handled by the dehydrator, since the danger of heating and molding is greatly lessened with low humidity.

FLOYD D. YOUNG, Weather Bureau.

EATHER Men of Many Countries Cooperate in the Second Polar Year

About 50 years ago, 12 nations, namely, Austria, Denmark, England, Canada, Finland, France, Germany, the Netherlands, Nor-

way, Russia, Sweden, and the United States, organized 14 expeditions to go into polar regions and establish stations to make simultaneous observations of meteorological, magnetic, and auroral conditions during the period from August 1882 to August 1883, according to a prearranged international plan. These expeditions rendered great service.

Yet many problems remained to perplex the students of meteorology, terrestrial magnetism, and atmospheric electricity. Accordingly, meteorologists in 1928 proposed that the First International Polar Year should be commemorated by a Second Polar Year exactly 50 years after the first one. The International Meteorological Organization, a world-wide association of meteorologists and geophysicists, appointed in 1929 the International Commission for the Polar Year, 1932–33. This organization invited the International Geodetic and Geophysical Union to cooperate in the undertaking. This invitation was accepted. Then began the task of enlisting the aid of the various countries and interested organizations, and carrying out the preliminary steps of the Polar Year program.

Forty-four nations signified their willingness to cooperate. The Department of Terrestrial Magnetism of the Carnegie Institution of Washington, the International Geodetic and Geophysical Union, the Permanent Council for the Exploration of the Seas, and the International Scientific Radio Union, joined whole-heartedly in the endeavor. The work of coordinating the program was done by the International Commission for the Polar Year, 1932–33, under the presidency of D. la Cour, director of the Danish Meteorological Service. This commission held many conferences, received and sifted numerous proposals, drew up detailed instructions regarding necessary observations, instruments, etc., and furthered the undertaking in many ways.

New Stations Established

Meteorological and other stations already established in or near polar regions, and many stations in temperate and tropical regions, prepared for intense observational activity. New stations were established in the far North and the far South, to add to the existing network. The United States opened a station at Point Barrow, the northernmost point in Alaska, and undertook intensive work at College (Fairbanks), Alaska. Canada sent out three expeditions, one to Cape Hope's Advance in Hudson Straits, another to Chesterfield Inlet on Hudson Bay, and a third to Coppermine on Coronation Gulf. England sent an expedition to Fort Rae on Great Slave Lake, Canada. Sweden opened two stations in Spitsbergen (latitude 78° N.). Russia opened a number of stations in the far North of her territory, including one at Hooker Island, Franz Josef Land (latitude 80° N.). Other countries took similar action.

Thus with the collaboration of many nations the Second Polar Year began on August 1, 1932. It closed on August 31, 1933, in the Northern Hemisphere and on December 31, 1933, in the Southern Hemisphere. The meteorological work involved the customary observations at fixed hours 2 or 4 times per day, as well as the continuous registration of barometric pressure, temperature, humidity, wind direction and velocity, precipitation, and sunshine. It required frequent observations of clouds and weather as well as other phenomena.

Observations of the upper atmosphere were made by releasing small balloons, filled with hydrogen gas, and watching them through a theodolite (a telescope similar to a surveyor's transit with devices for measuring horizontal and vertical angles) to determine the free-air wind directions and velocities. Larger balloons were sent up carrying self-recording instruments to indicate the barometric pressure, temperature, and humidity of the air to great heights well into the stratosphere. When found and returned to the meterological stations these instruments furnished valuable information.

For the first time on a large scale, balloons were used to carry radiometeorographs, which sent radio signals to the earth depicting the barometric pressure and the temperature of the air continuously. This means of investigating conditions at great heights proved invaluable for sparsely settled regions where the chance of finding theinstrument was meager. Moreover, it furnished a record immediately. Airplanes carrying self-recording instruments were also employed at various places, including Alaska, to determine conditions aloft.

In addition, a number of stations made observations of atmospheric

and terrestrial magnetism and electricity.

Polar Year Charts to be Published

The purpose of the Polar Year was to study conditions on a world-wide scale, and preparations are now being made by the Deutsche Seewarte of Hamburg, Germany, to publish a weather chart for each day of the Polar Year covering the entire Northern Hemisphere, both land and sea. Practically all countries with territory or ships north of the Equator are contributing observations to this end, so that meteorologists may follow cyclones and anticyclones, cold waves, etc., anywhere around the world. Observations of winds and other conditions in the atmosphere from the ground to far into the stratosphere also are being published. By means of these, the circulation of the atmosphere from one hemisphere to the other, east and west, north and south, may be better understood, and weather forecasters will have facts by which to judge when, where, and even how the cold air from polar regions comes into conflict with the warm air from equatorial regions and produces rain.

L. P. Harrison, Weather Bureau.

EATHER Relations in Successive Months Studied by U. S. Meteorologists

The tendency of certain weather characteristics to persist for considerable periods is well known. Comparatively wet or dry, warm

or cool weather, of a given month often carries over into succeeding months. Two or more months in succession rather frequently have weather of the same general character. An examination of weather records shows that this tendency is somewhat pronounced for certain weather conditions and for certain areas; but it is not generally true for different kinds of weather in any particular area nor for all areas.

In fact some localities show quite as marked tendencies to opposite conditions from month to month as others do for agreement. The following summaries indicate these relations for selected States, based on the average State rainfall and average State temperatures for the four principal crop-growing months (May-August). The States, in general, represent areas in which different climatological conditions

prevail.

For Nebraska (the records covering 58 years from 1876 to 1933), May rainfall was above normal 24 times and for these years June, July, August, and the summer (June-August) had above normal in just half the years and below normal in the other half. However, for the 25 years in which June had above-normal rainfall July also had above-normal rainfall 16 times and below normal only 9 times, making agreement between the 2 months in 64 percent of the years. For the 24 years in which July had above normal only 10 years had above normal in August. Considering only the months when rainfall was 1 inch or more above normal, no striking relations are shown except in the case of June with July. June had rainfall of 1 inch or more above normal in 9 years and for these 9 years July had above normal 7 times and below normal only twice.

In general, deficiencies of rainfall show a greater tendency to carry over from month to month than do excesses. In Nebraska for the 58 years of record May had 1 inch or more below normal 15 times and for these 15 years June had below normal 9 times, July 11 times, and August 9 times, while the summer, as a whole (June-August) had below normal 11 times. June had 1 inch or more below normal in 16 years and in 10 of these July also had below normal. But little relation is shown between deficiencies in July and August rainfall.

The records show a rather marked tendency in Nebraska for either an unusually wet or an unusually dry spring to be followed by a dry summer. Six years of the 58 had 1 inch or more above normal rainfall in the 3 spring months (March-May) and 4 of the 6 had below-normal rainfall in summer (June-August); 4 had 1 inch or more below normal in spring and of these 4 years, 3 also had below normal in summer.

Warm Weather Has Tendency to Persist

With regard to temperature, there is a much greater tendency for warm weather to persist from month to month than for cool weather to carry over. When temperatures were below normal in Nebraska there were substantially the same number of opposite as of like conditions for the following months, except in June and July. June was 1° F. or more below normal 18 times in the 58 years and of these 18 years July also was below normal 12 times. However, during these 58 years of record in Nebraska the average May temperatures were above normal by 1° or more 23 times and for these 23 years, June had above normal 17 times, July 13, August 17, and the summer 18 times. Also for the 25 years when the June temperature was 1° or more above normal, 72 percent of the Julys were warmer than normal and also a like percentage of Augusts.

In the case of Ohio rainfall for the 61 years of record there is little or no relation shown between May and the succeeding summer months, either when May was comparatively wet or when the month had below-normal rainfall. However, for the 30 years when June had above normal July also had above normal 20 times, but for the 36

years when July had above normal August had like conditions only 15 times. The records show some interesting comparisons for the months having rainfall deficiencies in this State. For the 61 years of record May had 1 inch or more below normal 17 times and for these 17 years June had below normal 8 times, July 4 times, and August 10 times. However, for the 9 years with 1 inch or more below normal in June, July had below normal 7 times, or in 78 percent of the years, and

August had like conditions 6 times.

The 46 years of record for Pennsylvania indicate that May does not afford a good index for the succeeding month's rainfall in that State. Here 12 of the 46 years had 1 inch or more below normal in May and for these 12 years June had below normal only 3 times, July 4 times, and August 5 times, while the summer, as a whole (June-August) had below normal only 3 times. However, for the 11 years in which the deficiencies in June were 1 inch or more, July also had below normal 9 times, and August 7 times; while for the 9 years in which July had deficiencies of 1 inch or more 7 of the 9 years had below normal in August also. Again for the 14 years when May had above-normal rainfall amounting to 1 inch or more, only 3 Junes had above normal, 5 Julys, and 6 Augusts. Here again conditions reverse themselves with June, for of the 9 years when that month had an excess above normal of 1 inch or more, 7 of the 9 had above normal in July also. For the 12 years when July had 1 inch or more above normal, the August record was 50-50.

Index Value of Temperatures in Pennsylvania

May temperatures in Pennsylvania appear from the record to afford a better index of conditions for succeeding months than does the rainfall. During the 56 years May was 1° or more cooler than normal 14 times and for these 14 years June, July, and August were cooler than normal 9 times, or in 64 percent of the years, while for the 15 Junes with deficiencies in temperature of 1° or more, 10 had below-normal temperatures in July, and 9 in August. In the 12 years when July was relatively cool 8 had below-normal temperatures in August. Pennsylvania shows also a decided tendency for a warm month to be succeeded

by like conditions.

The record for Alabama, typical of the Southern States, shows a decided tendency for wet months to be followed by opposite conditions. For example, for the 50 years of record available, May had 1 inch or more above-normal rainfall 16 times and for these 16 years June had above normal 7 times and July only twice. There were 11 Junes with 1 inch or more above normal and for these 11 July had above normal in only 2 years, and August in 3. Also for the 8 years when July had similar excesses, there were only 2 years with above normal in August. However, there is shown for Alabama a much closer relation between dry months. For the 19 years when May had a deficiency of 1 inch or more of rainfall, 14 of the 19 also had below normal in June, 10 in July, and 12 in August. Again, for the 17 years with like deficiencies in June, July had below normal 11 times; for the 14 years with 1 inch or more below normal in July, August was below 10 times. Thus the records show a decided tendency in this State for a wet month to be succeeded by below-normal rainfall and for deficient rainfall to carry over into the succeeding months. However, when the spring and the summer seasons are considered as a unit there

is a marked seasonal relation shown. For example, ourng the 50 years under consideration in Alabama there were 21 springs (March-May) with rainfall 1 inch or more above normal and for these 21 years the succeeding summer (June-August) had above normal 15 times. representing 71 percent of the years. Again there were 22 springs with rainfall below normal to the amount of 1 inch or more and for these 22 the succeeding summer had below normal 14 times.

J. B. KINCER. Weather Bureau.

HEAT Exporting from Meets Emergency Problem

When the 1933 crop of wheat Northwest by U. S. Agency in the United States began to move from the farms, an emergency arose in the Pacific North-

west. This region, which comprises the States of Washington, Oregon, and Idaho, normally produces much more wheat than is consumed within the area. Therefore, a larger proportion of the wheat from the Pacific Northwest moves into export trade than is true of other parts of the United States. The principal type of wheat produced in this region is white wheat, chiefly used in the manufacture

of cracker and biscuit flour.

On July 1, 1933, 41,800,000 bushels of wheat were carried over from the crops of previous years in Washington, Oregon, and Idaho. carry-over, added to the crop of 83,000,000 bushels, brought total supplies for Washington, Oregon, and Idaho to nearly 125,000,000 bushels as compared with 108,000,000 bushels in 1932 and a 5-year average (1929-33) of 115,000,000 bushels. These excessive supplies in 1933 in the face of demoralized export markets made it practically impossible to dispose of the surplus from the Pacific Northwest without

governmental aid.

Meanwhile, the short crop east of the Rocky Mountains had caused prices to advance until they were considerably above an export basis. Wheat in the Pacific Northwest became distressed because this region is far removed from consuming centers and prices in the region did not follow the rise at Chicago and other markets in the interior. prices in the Pacific Northwest far below prices in other parts of the country, wheat and flour started to move in a large volume through the Panama Canal and in smaller amounts overland into the southeastern territory and the Atlantic States. This movement had a depressing effect on the entire domestic price level. Furthermore, growers and exporters faced serious congestion at numerous shipping points. situation was extremely critical and interests in the Pacific Northwest urged the Department of Agriculture to take steps to relieve the situation. These appeals for assistance came from growers, exporters, millers, bankers, and other interests in the region. Grain dealers and millers in the Southwestern and Southeastern states also urged that steps be taken to protect their markets from the effects of sales of distressed wheat from the Pacific coast.

Marketing Agreement Entered Into

In response to these requests the Department made a careful study of the situation. After several hearings, a marketing agreement was entered into by the Secretary of Agriculture jointly with wheat

producers, grain exporters, and millers. The legal authority for this agreement was found in paragraph (2) of section 8 of the Agricultural Adjustment Act which gives the Secretary of Agriculture the power to enter into marketing agreements with those engaged in handling, in interstate or foreign commerce, any agricultural commodity or product thereof. The authority for using proceeds derived from processing and other taxes for the expansion of markets and for the removal of agricultural surpluses was found in paragraph (b) of section 12 of the act.

An association known as the North Pacific Emergency Export Association was formed to serve as a clearing house which arranged, through its members, the details of purchasing, shipping, handling, and selling wheat and flour for export from Washington, Oregon, and Idaho. The agreement provided, further, that the Agricultural Adjustment Administration reimburse exporters for the loss represented by the difference between the price at which the wheat was bought from the producers and the sales price for export in the world's markets. Purchases and sales of wheat and flour and the terms of such purchases and sales, as well as the approval of ship tonnage and destinations were subject to the approval of the Secretary of Agriculture. Fixed handling and selling costs, including milling, were provided for in exhibits attached to the agreement. All expenses of the association were prorated among the members who handled the exports.

One of the main features of the association was that its operations were conducted strictly through the existing regular agencies for handling both wheat and flour and the Government merely assisted in the transaction by assuming the loss between the domestic and export price. Another very important feature about the marketing agreement was that the association could never at any time be long more than 1,000,000 bushels of wheat. This preserved an orderly day-to-day merchandising operation and prevented the accumulation in the hands of the association of any large amount of wheat that would be burdensome and difficult to dispose of as was the case during stabiliza-

tion operations of the Federal Farm Board.

Portland Prices Gradually Worked Up

The association made its first purchases on October 19, 1933, and its first sales on November 1, 1933. Heavy purchases were made during November and Portland prices were gradually worked up to around 10 or 12 cents under Chicago. From December 1933 to May 1934, inclusive, a sufficient amount of wheat was bought to hold Pacific coast prices at about that relationship with Chicago. The activities of the association practically ceased at the time of the longshoremens' strike which tied up shipping from Pacific coast ports from May 9 to July 31, 1934. After the strike was concluded, the association completed its deliveries on sales which had been made prior to the strike. By October 1, 1934, the 1933 operations were practically complete, although a few forward sales still remained to be shipped for export.

The association purchased a total of 28,390,991 bushels of wheat up to and including October 4, 1934. It sold in the export market a total of 28,383,672 bushels, of which 21,846,284 bushels, or about 77 percent, were sold in the form of wheat and 6,537,384 bushels, or about 23 percent, in the form of flour. Approximately two-thirds of the wheat and flour shipped to foreign markets was shipped in foreign

vessels, and approximately one-third in vessels flying the American flag. About 76 percent of the wheat sold was shipped to China and Japan. Wheat was sold for shipment to the following destinations, in order of volume shipped: China, Japan, Ireland, England, Belgium, several countries in Central America and South America, the Nether-

lands, Germany, and Finland.

The sale of flour, although smaller in total volume, had a more scattered distribution. About 39 percent of the flour was sold to China and about 33 percent to the Philippines. The destinations in order of volume were as follows: China, Philippine Islands, Norway, Manchuria, Scotland, Guatemala, Ecuador, Nicaragua, Haiti, Salvador, Cuba, Peru, the Netherlands, Costa Rica, Panama, Honduras, Finland, Mexico, Japan, Denmark, New Zealand, Guam, Tahita, Saigon, Canary Islands, Egypt, Virgin Islands, Jamaica, Colombia, Venezuela, West Indies, Sumatra, British East Africa, and Mozambique.

The prices at which wheat was bought ranged during most of the marketing year between 70 and 80 cents a bushel. Sales prices of wheat ranged rather widely, but for the most part were around 50 to 52 cents a bushel f. o. b. steamer. The bulk of the flour was sold at prices between \$2.40 and \$2.80 per barrel. The difference between prices paid and prices received was remitted to the members of the association out of funds collected from the wheat-processing tax. It is estimated that not more than \$6,500,000 was spent in this operation. This amounts to an average of a little less than 23 cents a bushel on the

wheat handled.

The Effects of the Export Operation

The operation of the North Pacific Emergency Export Association retarded the movement of distress wheat from the Pacific Northwest into eastern markets. It accounted for about 87 percent of the net exports of wheat including flour from the United States during 1933-34. The operation of the association reduced the spread between Pacific coast prices and prices east of the Rockies. During July, August, and September 1933, before the association was open for business, farm prices in Washington averaged about 15 cents a bushel under the average farm price for the entire United States; from November 1933 to May 1934, while the association was in operation, farm prices in Washington averaged only 12 cents a bushel under the average farm prices for the country as a whole. During July, August, and September 1933, Seattle prices averaged about 21 cents under Chicago futures and during a brief period were as low as 26 cents under Chicago. From November to May the average spread between Chicago and Seattle prices was about 12 cents a bushel and on some days the spread was as low as 6 cents.

The operation of this association was an emergency activity. It offered tremendous relief to producers and other interests in the Pacific Northwest in disposing of the burdensome surpluses of the 1933 crop. It also prevented the low price of that wheat from depressing domestic values in the entire United States. This operation, however, does not represent any fixed, permanent policy on the part of the Administration for disposing of export surpluses but was

strictly an emergency measure.

FRANK A. THEIS, Agricultural Adjustment Administration.

IND Erosion Can be Controlled by Proper Tillage Operations

Soil erosion by wind has been more destructive throughout the Great Plains area during 1933 and 1934 than for any other similar period

since the native sod was broken for crop production. Millions of acres are subject to wind erosion, and from hundreds of thousands of acres of level to slightly rolling land the soil was blown as deep as the fields had been tilled the previous year (fig. 74). Fences, Russianthistles, weeds, shrubs, farm machinery in the fields, farmsteads, windbreaks, roads, or any obstruction that might retard the wind velocity and permit the soil to settle were filled or covered with windblown soil.

The principal causes of the disastrous soil blowing in 1933 and 1934 were continuous high winds, intensive cultivation, the practice of burning stubble, low rainfall, and lack of organic matter to hold the



FIGURE 74.—The tilled soil in this field has been nearly all blown away and the subsoil shows the marks of the tillage implements.

soil in place. The loam and light sandy soils are most subject to blowing. Under the same conditions the light sandy soils will usually blow before the heavier loams.

One of the best methods to control soil blowing on continuous-wheat land is to begin immediately after harvest with a lister, one-way disk plow, or duckfoot cultivator. The duckfoot can be used provided the stubble is not too heavy or the soil too dry and hard. These implements cover some of the stubble but leave some uncovered and some only partially covered. The land then will not blow badly and is in good condition to retain sudden heavy rains. The next operation should preferably be made after a few rains have occurred and weed growth has started. The field may be relisted by splitting the ridges, or the ridges may be worked down with a ridge buster, weeder, or other implement capable of leveling the ridges and furrows. This second operation further mixes the soil and stubble.

The land should be kept free of weeds from the time the lister ridges are worked or after the first one-way disk plow, tandem disk, or duckfoot operation until seeding for wheat. The amount of rainfall received usually determines the number of times the soil must be worked to destroy the weed growth. Whatever implement is used, the surface soil should not be worked to a fine dust mulch. A cloddy surface is desired for rainfall absorption and for control of blowing. Such implements as the duckfoot cultivator, spring-tooth harrow, subsoil packer, and rod weeder are much preferred to the one-way disk plow, tandem disk harrow, peg-tooth harrow, clod crusher, or surface roller, for prevention of soil blowing. For seedbed preparation the proper use of the lister, ridge buster, one-way disk plow, duckfoot, or subsoil packer will usually be found sufficient for small-grain and sorghum crops.

The methods of tillage described above for continuous wheat may be used in the fallow system. Fallow tillage begins early in the

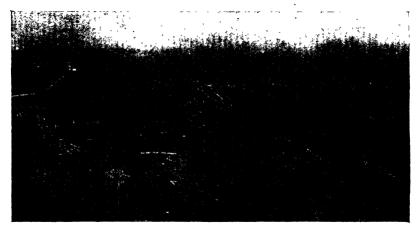


FIGURE 75.—The surface soil is being rapidly blown off this field.

spring, before weed growth starts. The implements and the order of their use are similar to the continuous-wheat methods. The land must be kept in a roughened condition and free of weeds. A roughened cloddy soil surface is more difficult to maintain due to the lack of new stubble and to more tillage operations which tend to pulverize the soil to a fine dust. Listing and relisting by splitting the ridges is one of the best methods to maintain a rough cloddy soil surface and to thoroughly mix the old stubble in the soil. In the winterwheat area of the Central Plains the field should be allowed to remain in a rough condition until 45 to 60 days before seeding. Then the lister ridges must be worked down, subsoil packed, and field rendered free of weeds, but care must be taken not to produce a fine surface soil by the use of disk or drags.

The greatest danger of soil blowing is during the winter and spring months. Three factors are responsible for this; (1) the weathering of the soil during the winter, (2) high winds, and (3) lack of sufficient plant growth to protect the weathered surface soil. Wind erosion should be checked as soon as it starts. Usually the first sign of soil

blowing is a little dust rising from a small portion of the field. Later the dust will come from a larger area and if control measures are not begun promptly all the field will eventually be blowing (fig. 75).

The best method of checking soil blowing is by roughening the surface in strips at right angles to the prevailing winds (fig. 76). A cultivator or spring-tooth harrow may be used for this purpose. A lister is preferable in light sand or loose, dry loam soils. One to three lister furrows made every 10 rods usually are sufficient but the entire



FIGURE 76.-A field listed in parallel strips to check wind erosion.

field may require listing to stop the soil movement. If the soil is dry and very loose, even listing does not always check the soil movement.

In a clean-tilled field enough clods must be brought to the surface and remain there to prevent the shifting of fine silt and sands. Dry dusty loam and light sandy soils do not have clods near the surface. Rainfall is needed to pack the surface or the lister must penetrate to the moist hard subsoil and lift the clods to the surface.

RAYMOND R. DRAKE, Bureau of Agricultural Engineering.

AGRICULTURAL STATISTICS

Prepared under the direction of the statistical committee: Joseph A. Becker, chairman, Paul Froehlich, secretary, S. W. Mendum, L. D. Howell, F. J. HOSKING, and G. W. SPRAGUE.

The statistical section of this Yearbook brings together what seem from experience to be the most important agricultural statistics of the United States, and of the world so far as the agriculture of this country is concerned. Important historical and geographical series have been given for the more recent years. Most of the data for earlier years, not covered in this Yearbook, will be found in previous issues.

For greater detail on individual commodities, the Statistical Bulletin series may be consulted. Statistical Bulletins 37 to 48, inclusive, have been published during the last 3 years and relate to wheat, corn, cotton, fruits and vegetables, forest

products, and cold-storage holdings.

For current statistics to supplement Yearbook statistics, the following sources should be used: (1) Crops and Markets, a monthly publication of the Department carrying the latest current statistics on agriculture in the United States; (2) Foreign Crops and Markets, issued weekly by the Bureau of Agricultural Economics and devoted to current world statistics of crops, livestock, and markets; (3) foreign commodity reports, published by the Bureau of Agricultural Economics and showing the latest world information on single commodities and released when important information is received; (4) the Agricultural Situation, issued monthly; (5) market news reports of the Bureau of Agricultural Economics, issued daily, weekly, monthly, quarterly, or at irregular intervals at Washington or at the principal markets. Requests for these publications may be addressed to Division of Economic Information, Bureau of Agricultural Economics, Washington, D. C.

or Economic Information, Bureau of Agricultural Economics, washington, D.C. The crop and livestock reporting service estimates acreage, condition, yield per acre, production, prices paid to producers, and farm value of crops; also numbers, production, prices paid to producers, and value of livestock and livestock products. The organization of this service outside of the Crop Reporting Board and the office force in Washington consists of 40 State field offices, each with an agricultural statistician in charge. There is 1 field office for the New England States 1 for Maryland and Delaware 1 for Utah and Newsley and 1 for Wash-States, 1 for Maryland and Delaware, 1 for Utah and Nevada, and 1 for Wash-

ington and Oregon. Acreages for the year 1909 are as reported by the Bureau of the Census; acreages in 1919, 1924, and 1929 are based on the census supplemented by State enumerations. In the intercensal years, from 1910 to 1915, estimated acreages were obtained by applying estimated percentages of decrease or increase to the published acreage of the preceding year. The estimates from 1916 to 1918, 1920 to 1923, 1925 to 1928, and 1930 to 1934 are based on acreage changes from year to year as shown by a sample of over 2 percent of the crop acreages in each year, supplemented by State enumerations.

Yields per acre are estimates based on reports of one or more farmers in each agricultural township on the average yield per acre in their localities. For 1929 to 1934, yields for all crops except cotton have been adjusted to be comparable with yields derived from the census figures of 1919, 1924, and 1929. For all crops except cotton and a few minor crops, yields from 1919 to 1928 have been adjusted to be comparable with the census yields of 1919, 1924, and 1929. For these same crops, revisions of acreage have been made for the period 1919 to 1928 essentially to the acreages reported by the censuses of 1920 and 1930. For cotton, both acreage and yield have been revised to the basis of the 1930 census. Production is acreage times the yield-per-acre figure. Linters are not included in cotton figures, unless so stated in the respective tables. 345

In this Yearbook are shown for the first time historical revisions prior to 1919, by which the currently published estimates have been made consistent with the decennial census figures, supplemented by State enumerations. These historical revisions are limited at present to the first tables, or master tables, under wheat, corn, oats, and cotton. For other important crops, revised data will be published in future issues.

Estimates of farm stocks, sales, quality, crop condition, and miscellaneous information concerning crops are based either upon sample data or upon estimates

of crop reporters for their localities.

The term "commercial" is used in connection with certain crop estimates to distinguish some part of the total production of a crop. Except for indicating that the entire production is not represented in the estimate, "commercial" does not have the same meaning in each instance where used. The commercial apple-crop estimate, for example, represents that portion of the total apple crop which is sold or available for sale for consumption as fresh fruit. That portion of the crop which is used for cider, vinegar, canning, evaporating, or other manufacture is not included in the commercial crop as defined in this case. commercial orange and grapefruit crops in Florida represent the portion shipped or to be shipped out of the State by rail, boat, or autotruck, as differentiated from the portion canned, made into juice, sold or consumed locally, wasted, etc.

Estimates of commercial truck-crop production are concerned only with those areas growing crops primarily to supply the large consuming markets more or less distant from the producing center. Production in home and market gardens, intended primarily for local sale, is excluded. Similarly with truck crops grown for commercial canning or manufacture, the estimates include only quantities grown for use by canning or packing establishments and exclude quantities canned in the home. For the commercial acreages in the areas concerned, the truck-crop estimates are intended to include the total production suitable for food marketing purposes (unless destroyed by natural cause before harvest), whether or not the entire crop finds a market or use. It is, therefore, customary practice to retain in these production estimates those quantities of produce which ordinarily would be marketable but which are left unharvested because of adverse marketing The canning-crop estimates represent the total quantity of raw conditions. product used by packers or canners for manufacturing purposes, including cold-packing.

Monthly prices received by producers on the specified dates are based on reports from special price reporters on the average price paid to farmers for all grades and qualities of a specific commodity. These men are mostly country buyers

of or dealers in agricultural products.

Farm values of crops as shown are computed mostly by applying to total production the December 1 price paid to producers. These prices are reported by the crop reporters, who are farmers. The average price received for the portion of the crop sold may be greater or less than this price, depending on the prices previous and subsequent to December 1 and the amount of the crop sold at the different prices. For the years 1919 to 1934, weighted average prices for the crop-marketing season and farm values based on these weighted prices have displaced the December 1 prices and values for many crops.

For commercial truck crops and canning crops, and for certain fruit crops, the prices shown are the estimated season averages of the prices received by producers at the shipping point, including the cost of the container where this is a customary requirement of delivery. The December 1 price has been employed in computing farm values only in the case of certain miscellaneous crops of minor importance, where neither weighted averages of monthly prices nor estimates of average prices

for the entire marketing season are available.

The index numbers of prices received by producers (farm prices) were revised This revision was begun in 1931 to utilize the results of the 1930 census and additional data provided by the crop-estimating service for making index numbers of farm prices more representative of the actual changes in the prices of all farm products. The principal changes are: (1) the use of improved price series for dairy products and tobacco; (2) the addition of the prices of 20 products, including a group of truck crops; (3) shifting the weights from the marketings of the 1918-23 period to those of the 1924-29 period; and (4) index numbers for each group of commodities are weighted in proportion to that group's contribution to total cash farm income, whereas formerly the combined index of farm prices was computed from the weighted aggregate value of the 27 commodities used in the earlier series.

Numbers of livestock on farms on January 1, 1920 and 1925, are based on the census enumerations as of those dates, supplemented by enumerations by

State agencies, such as assessors' and brand-inspection boards, and by records of shipments during 1920 and 1925. Numbers on January 1, 1930, give weight insofar as feasible to the numbers reported by the census of 1930 which was as of April 1, with allowance for indicated changes between January 1 and April 1. In the intercensal years, from 1911 to 1919, the numbers of livestock were obtained by methods similar to those used for crop acreages. Estimates from 1921 to 1924, from 1926 to 1929, and from 1931 to 1935 are based on a sample of over 2 percent, supplemented by trends derived from assessors' enumerations, reports of brandinspection boards, market movements, and stockyard receipts. The census bases are not always comparable from one decade to another, because of changes of dates and classifications.

The average value per head on January 1 is estimated from reports of correspondents relating to livestock in their vicinity. These tend to reflect inventory values as distinguished from the monthly prices which relate to sales. The farm value on January 1 is computed by applying the average value per head to the

number on farms.

The Federal market news service supplies much of the information on market prices and movements. The leased-wire telegraph system in use by this service extends from the Atlantic to the Pacific Ocean and reaches most of the important At each of the branch offices commodity specialists gather information regarding supply, market demand, and prices of the products on which they re-They observe sales actually made on the markets and are constantly in touch with the traders, who in many instances give them access to their office records in order that they may have specific information on which to base their Car-lot shipments and market receipts of crops and livestock products are reported by officials and agents of railroads, express companies, and boat lines, or are compiled from trade publications. Shipments to market by motor truck have continued important, and at a few of the markets receipts by truck are reported by dealers and distributors. Data on receipts, slaughter, and shipments of livestock are obtained from monthly reports submitted by the public stock-Data on cold-storage stocks are obtained directly from all important cold-storage warehouses, and data on commercial stocks of grain are reported by boards of trade, etc. Leaf-tobacco stocks are reported directly by dealers and manufacturers.

Where a weighting factor is available, market prices as shown are weighted averages. But in many cases a weighting factor is not available, and the prices shown are usually the means of ranges of quotations without reference to quantity.

Prices derived from different sources may not be strictly comparable, although for most purposes they are satisfactory. Data as to commercial stocks and movements of various commodities are as nearly complete as practicable and are con-

sidered fairly representative.

The tables of international trade cover substantially the international trade of the world. The total imports and total exports in any one year cannot be expected to balance, although disagreements tend to be compensated over a series of years. Among the sources of disagreement are: The different periods covered by the year of various countries; imports received in the year subsequent to the year of export; lack of uniformity in classification of goods as among countries; different trade practices and varying degrees of failure in recording countries of origin and ultimate destinations; different practices in recording reexported goods, and different methods of treating free ports. Exports given are domestic exports and the imports given are imports for consumption whenever it is possible to distinguish such imports from general imports, that is, "special" or net, instead of general. General imports are all the imports reported. In foreign countries "special" trade is imports for consumption, or net imports, or imports less resports. In the United States imports for consumption are those entered for actual consumption and include withdrawals from bonded warehouses for consumption. "Special" or net figures are used in the international trade tables for the following countries: Belgium, Denmark, Egypt, Irish Free State, China, Netherlands Indies, France, and the United Kingdom. In the United States trade tables and wherever United States figures are used, they are domestic exports and general imports unless otherwise specified. While there are some inevitable omissions, there may be some duplications because of reshipments which do not appear as such in the official reports. In the trade tables, figures for United States include Alaska, Puerto Rico, and Hawaii, but do not include the Philippine Islands or the Virgin Islands of United States.

Statistics of acreage and production in foreign countries are compiled as far as possible from official sources and are, therefore, subject to whatever errors may

result from shortcomings in the reporting and statistical services of the various countries. Inaccuracies also result from differences in nomenclature and classification in foreign countries. Except where otherwise stated, pre-war data refer to pre-war boundaries. Yields per acre are calculated from acreage and production, both rounded to thousand units, and are therefore subject to a greater possibility of error when calculated for countries with small acreage.

Agricultural Adjustment Administration work got under way about the middle of 1933. This Yearbook contains 10 summary tables, indicating in a general way some of the results of that work. These tables comprise the last pages in the

section on Farm Business and Related Statistics.

Prices prevailing in 1933, 1934, and 1935 are stated in terms of United States currency, unless otherwise specified. For the convenience of those wishing to convert currency prices to gold prices, a table of the gold value of the dollar, weekly from April 1933 to March 1935, will be found as the last table in this Yearbook.

As an aid to the comprehension and use of these statistics, the following table of weights, measures, and conversion factors will be useful. It represents the important basic figures, used in the Yearbook:

Weights, measures, and conversion factors used in the Yearbook of Agriculture

,	·									
Commodity	Unit ¹	Net weight in pounds		Commodity	Unit ¹	Net weight in pounds				
Alfalfa seed. Apricots. Barley. Beans, dry. Do Buckwheat. Clover seed. Corn, ear, husked. Corn, shelled. Cotton, ginned. Cottonseed. Cottonseed oil. Cranberries. Flaxseed. Flour, verious. Grain sorghums. Grapefruit (California).		48 60 100 48 60 270 56 (3500 4478 322	Lemo Milk Oats- Oran Orch Pean Rape Rice, Rice, Rye- Soyb Spelt Timo Whas	pseed ges (Florida) ges (California) ard grass ard grass to oil oses seed rough milled ean oil thy seed atoes at us commodities	Box. Gallon. Bushel. Boxdo Bushel. Gallon. Busheldo .do .do .do .do .do .do .do .do .d	90 70 14 7. 5 60 45 100 56 45 40 45 53 60				
Commodity	Un	it		Equivalent to—						
Almonds Apples Do Barley flour Buckwheat flour Filberts Malt Oatmeal Peaches (California) Peanuts Prunes Raisins Rice Rye flour Walnuts, English Wheat flour	1 barrel. 1 barrel (196 pou do 1 pound shelled. 1.1 bushels. 1 barrel (196 pou 1 pound dried 1 pound shelled. 1 pound shelled. 1 pound milled 1 pound milled 1 barrel (196 pou 1 pound shelled	nds)		About 3½ pounds unsh About 7 pounds fresh. 3 boxes or 3 bushel bask About 9 bushels of barl About 7 bushels of burl About 12.22 pounds unsh About 1 bushel of barle About 10% bushels of o About 5½ pounds fresh About 1½ pounds fresh About 4½ pounds of fresh About 1.62 pounds of fresh About 1.62 pounds of fresh About 6 bushels of rye, About 2.38 pounds unsh About 4.7 bushels of wh	rets. ey. kwheat. helled. y. hats. lin Californ. s. ly grapes. ly grapes. helled.	ia; 3 to 4				

¹ Standard bushel used in the United States contains 2,150.42 cubic inches; the gallon, 231 cubic inches.
² The standard weight of 70 pounds is usually recognized as being about 2 measured bushels of husked corn on the ear, as it requires 70 pounds to yield 1 bushel, or 56 pounds, of shelled corn.
³ Gross

⁴ For statistical purposes the bale of cotton is 500 pounds gross or 478 pounds net weight. Actual bale weights vary from year to year and the customary average weights of bales of foreign growths differ from that of the American square bale.

³ This figure has been used for conversions relating to the period 1921-34. Because of changes in milling processes the following factors have been used for earlier periods: 1790-1879, 5 bushels; 1880-1908, 4.75 bushels; 1909-17, 4.7 bushels; 1918 and 1919, 4.5 bushels; 1920, 4.6 bushels.

STATISTICS OF GRAINS

Table 1.—Wheat: Acreage, production, value, and foreign trade, United States, 1866-1934

						,					
						Wheat	Wheat per bushel	Foreign yea	i trade, ar begin	includin ning Jul	g flour,
						per bushel at	at Minne- apolis.			Net exports?	
Year	Acre- age har- vested	Average yield per acre	Production	Price per bushel re-ceived by producers Dec.	Farm value, basis Dec. 1 price	Chicago, 1868-67 to 1893-99, spring wheat, 1899-1900 to date, No. 2 Hard Winter, year begin- ning July 1 1	1899-1900 to 1917-18, No. 1 Northern spring, and 1918-19 to date, No. 1 Dark Northern spring, year begin- ning July 1 2	Do- mestic ex- ports ⁵	Im- ports ⁶	Total	Per- cent- age of pro- duc- tion
1866	1,000 acres 15,408	Bush- els 11.0	1,000 bushels 169,703	Cents	1,000 dollars	Cents 189	Cents	1,000 bushels 12,647	1,000 bushels 3,092	1,000 bushels 10,828	Per- cent 6.4
1867	16, 738	12.6 12.9	210, 878			189 128		12, 647 26, 323 29, 717	2,014	24, 550	11.6 11.5
1868 1869	19, 140		246, 272 287, 746						1,830	28, 314	
1869	21, 194	13.7 12.1	289, 526			99 115		53, 901 52, 574	1, 286 867	53, 126 52, 195	18.3 20.5 13.8 18.7 28.1 20.5 23.7 18.5
1871	20, 945 22, 230	12.2	254, 429 271, 881			124		38,996	2, 411	37.587	13.8
1872 1873	22, 962 24, 866	11.8 12.9	271, 482			121 116		52,015 91,510	1,841	50, 705 90, 418	18.7
1874	27, 310	13.0	356, 115			95		72, 913	368	72, 845	20.5
1875 1876	28, 382 28, 283	11. 1 10. 9	313, 728			106 122		74, 751 57, 044	1, 664 366	74, 508 57, 148	23.7
1877	27, 963	14.1	395, 510			111		92, 142	1.391	92,028	23.3
1878 1879	33, 379	13.5	449, 175			90		150, 503	2,074	150, 253	83. õ
1879	35, 450 35, 347	13.0 13.0	459, 234			110		181,807 188,308	487	181, 951	39. 6 37. 5
1880 1881	38,096	13. 2 11. 0	502, 257 405, 886			99 129		188, 308 123, 371	212 867	188, 250 123, 211	37.5
1882	36, 795 36, 496	15.1	552, 207			105		1 150, 113	1.088	1 190,000	30. 4 27. 2
1883 1884	35, 587 38, 485	12.3 14.8	438, 762 571, 292			93 80		113, 822 135, 232	33 213	113, 892 135, 301	27. 2 26. 0 23. 7 24. 1 30. 5 25. 0 21. 5
1885	35, 095	11.4	399, 931			81		96, 611	389	96,569	24.1
1886 1887	36, 312	14. 1 13. 3	513, 540 490, 761	1	1	77		156, 685 122, 616	283 596	156, 760 122, 524	30.5
1888	134,969	12. 1 13. 9	423, 867			95		90, 944		91,030	21.5
1889 1889	33.580	13. 9 14. 0	468, 874 504, 370			81		112, 488	163	112, 507	
1890	36, 098 36, 686	12. 2	449, 042			97	1	1 109, 017	1 586	109,054	24.3
1891	41, 090 42, 979	16.5	677, 543 611, 854			89		229, 465 196, 068	2, 463 968	228, 841 195, 672	33.8
1893	40,790	14. 2 12. 4	505, 795			60		168, 498	1, 183	167, 531	33. 1
1894	40, 167	13, 5	541.873			57 61	}	148, 630 130, 099	1, 439	1 147, 740	24. 3 33. 8 32. 0 33. 1 27. 3 24. 0
1896	40, 828	12.8	522, 963			70		148, 767		148, 725	26.4
1897	43, 413	14 f	N BOA 202			91 71		221, 143 227, 240	2,060	220, 965 227, 300	36.5 29.6
1898	50, 506 52, 589	12. 6	768, 148 658, 534		l						
1899	52, 342		655, 143 599, 315			68	67 75	190, 772 220, 653	320 603	190, 749 220, 723	29.1 36.8
1900 1901	80, 847	15.0	762,540			71	72	239, 212	121	239, 137	36.8 31.4
1902	46, 244	1 14.5	11 688 959	l		73	74 89	207, 835	1,080	208, 016 124, 926	30.3 18.8 7.8 14.3 20.3
1904	43, 155	12.9	555, 571			101	113	46, 319	3,296	43, 612	7.8
1965	46, 306	15. 2	706,026	H		86		101,089	273	100,849	14.3
1906 1907	46, 230 44, 139	14.	740,509 628,764			96		166, 525	530		26.4

See footnotes at end of table.

Table 1.—Wheat: Acreage, production, value, and foreign trade, United States, 1866-1934—Continued

						Wheat	Wheat per bushel	Foreign yes	trade, ar begin	includin ning Jul	g flour,
					value, basis Dec. 1	per bushel at Chicago, 1866-67 to 1898-99, spring wheat, 1899-1900 to date, No. 2 Hard Winter, year begin- ning July 12	at Minne- apolis.			Net exports 7	
Year	Acre- age har- vested	Aver- age yield per acre	Produc- tion	Price per bushel re- ceived by pro- ducers Dec. 11			1890-1900 to 1917-18, No. 1 Northern spring, and 1918-19 to date, No. 1 Dark Northern spring, year begin- ning July 1 3	Do- mestic ex- ports ⁵	Im- ports ⁸	Total	Per- cent- age of pro- duc- tion
1908	1,000 acres 45,102	Bush- els 14. 3 15. 4	1,000 bushels 642,818 683,379	•	1,000 dollars	Cents 100	Cenis 111		1, 000 bushels 475	1,000 bushels 115,901	Per- cent 18.0
1909 1910 1911 1912	44, 265 44, 262 45, 793 49, 894 48, 413	15. 5 13. 7 12. 4 15. 1	683, 927 625, 476 618, 166			109 100 94 94	107	89, 173 71, 338 81, 801 145, 159	845 1, 175 3, 445 1, 304	88, 465 70, 164 78, 447 143, 938	12.9 11.2 12.7
1913 1914 1915 1916	52, 012 55, 613 60, 303	14.1	751, 101 897, 487 1, 008, 637 634, 572 619, 790			89 111 114 157	88 120	147, 955 335, 702 246, 221	2, 402 728 7, 254	146, 300 335, 162 239, 591 181, 067	19. 7 19. 5 37. 3 23. 8 28. 5
1917 1918 1919	46, 787	13. 2 14. 8 12. 9	619, 790 904, 130			228 224	220	1 132, 579	31, 215	102, 775 276, 615	16.6
1919 1920 1921 1922 1923	73, 700 62, 358 64, 566 61, 397 56, 920	12.9 13.5 12.7 13.8 13.3	952, 097 843, 277 818, 964 846, 649 759, 482	96.6		113	148 126	369, 313 282, 566 224, 900	57, 682 17, 375 20, 031	216, 671 312, 625 265, 590 205, 079 131, 892	22, 8 37, 1 32, 4 24, 2 17, 4
1924 1924 1925 1926 1927	50, 862 52, 460 52, 441 56, 815 59, 628	16.0 12.8 14.7 14.7	840, 091 669, 142 833, 544 874, 733	124. 7 143. 7 121. 7 119. 0	1,047,703 961,801 1,014,623 1,041,209	138	165 151 141	108, 035 219, 160 206, 259	15, 679 13, 264 15, 734	190, 578	30.3 13.8 24.7 21.8
1928 1929 1929	63, 320	12.9	800, 649 822, 180	103. 4	850, 308	130	130	153, 245	12, 956	140, 361	15, 6
1930 1931 1932 1933	62,661 57,103 57,114 47,910	14. 2 16. 3 13. 1 11. 0	.745, 788	39.0	363, 727 282, 808	58 58	71 61	135, 797 41, 211	12,886 9,382	123, 774 32, 285	12.6 13.3 4.3 4.8
1934 3	42, 235										

Market Record.

4 Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1919-29; January and June issues, 1927-34. Wheat flour converted to terms of grain on the following basis: 1866-79, 5: 1880-1908, 4.75; 1909-17, 4.7; 1918 and 1919, 4.5; 1920, 4.6; 1921-34, 4.7 bushels of grain per barrel of flour.

3 Includes flour milled from imported wheat.

4 Includes wheat imported for milling in bond and export.

7 Total exports (domestic plus foreign) minus total imports; beginning 1933-34 net figures are domestic arrorts minus imports for consumption. (See introductory text.)

exports minus imports for consumption. (See introductory text.)

Figure 2. Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns.

¹ Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop marketing season.
¹ 1866-67 to 1834-85, No. 2 spring—simple average of mean of weekly high and low cash prices, as quoted in annual reports of the Chicago Board of Trade; 1885-86 to December 1896, No. 2 spring—simple average of mean of daily high and low cash prices, as quoted in Bartel's Red Book (summary of current quotations in Chicago Daily Trade Bulletin); 3 nuary 1897-1901 how, as spring at 1888-99, No. 1 spring—simple average of mean of daily high and low cash prices as quoted in Chicago Daily Trade Bulletin; 1899-1900 to date, No. 2, Hard Winter computed by weighting selling prices by number of car lots sold, as reported in the Chicago Daily Trade Bulletin.
¹ 1899-1900 to 1917-18, No. 1 Northern spring and 1918-19 to date No. 1 Dark Northern spring, computed by weighting selling prices by number of car lots sold as reported in the Minneapolis Daily Market Record.
¹ Compiled from Commerce and Navigation of the United States. 1866-1917: Foreign Commerce and

Table 2.—Wheat, winter, durum, and other spring: Acreage seeded and harvested, and production, United States, 1909-34

		Winter	wheat		:	Durum	wheat	l	Other spring wheat			
Year	Acre- age seeded in pre- ceding fall	Acre- age har- vested	Aver- age yield per acre	Pro- due- tion	Acre- age seeded	Acre- age har- vested	Aver- age yield per acre	Pro- duc- tion	A.cre- age seeded	Acre- age har- vested	Average gield per acre	Pro- duc- tion
1909	1,000 acres 29,196 32,878 33,514 35,709 33,608 37,372 40,657 38,873	28, 152 29, 780 28, 406 31, 962 36, 203 39, 597	15. 3 14. 4 14. 2 15. 7 18. 5 16. 2	429, 875 428, 740 402, 703 501, 239 670, 945 640, 565	From spri: "du	1,000 acres 1909 to ng whe	at." n	o segre	availab	1,000 acres	Bush- els	1,900 bushels nt "all petween
1917 1918 1920 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1930 1931 1931 1932 1933 1934	37, 981 43, 399 51, 391 45, 505 45, 479 47, 415 45, 408 38, 635 40, 920 41, 134 48, 431 44, 971 45, 240 42, 223 42, 669 41, 850	26, 825 37, 171 50, 404 40, 409 43, 160 41, 649 38, 712 31, 962 37, 596 38, 195 36, 853 41, 188 40, 933 43, 080 35, 216 62, 485	14.5.0 14.5.2 14.0 13.7 14.3 16.1 16.1 15.2 16.3 15.4 19.0 13.0 13.3	389, 956 556, 506 748, 460 613, 227 602, 793 571, 459 571, 558 401, 116 631, 950 547, 666 577, 417 586, 055 631, 205 817, 962 478, 291	(2) (2) (2) (2) (2) (2) (2) (2) (2) 4, 882 5, 772 4, 836 4, 187 3, 140	5, 571 4, 745 2, 960 3, 946 2, 310	9. 9 9. 0 14. 5 9. 6 16. 1 14. 0 9. 3 14. 4 14. 1 9. 8 7. 0 10. 3	43, 550 54, 212 82, 245 38, 961 59, 114 58, 010 42, 469 95, 802 54, 710 57, 719 20, 712 40, 600 16, 737	\$ 19, 748 2 19, 102 3 17, 068 3 20, 816 15, 483 16, 037 15, 822 17, 097 17, 427 16, 285 18, 457 21, 160	17, 549 15, 397 14, 089 14, 144 13, 371 16, 321 14, 642 15, 988 15, 569 16, 561 16, 983 11, 063 17, 952 17, 115	10. 6 10. 5 13. 7 11. 7 15. 7 10. 9 15. 6 15. 4 11. 0 11. 8 8. 5 12. 6	192, 945 165, 222 209, 419 210, 016 159, 125 248, 708 239, 742 181, 415 200, 778 93, 547 226, 897 161, 446

Figures on durum apply to 4 States only—Minnesota, North Dakota, South Dakota, and Montana.
 Included in "All spring wheat"; see footnote 3.
 All spring wheat.
 Preliminary.

Table 3 .- Wheat, durum and other spring: Acreage seeded, by States, average 1927-31, and annual 1932-34

		Du	rum	spring				
State	Aver- age, 1927-31	1932	1933	1934 1	Aver- age, 1927–31	1932	1933	1934 1
Illinois Minnesota North Dakota South Dakota Nebraska Montana Wyoming Colorado New Mexico Utah Nevada	231 3, 826 1, 326	1,000 acres 110 3,072 962 43	1,000 acres - 90 2,378 630 42	1,000 acres 63 1,552 400 31	1,000 acres 140 1,076 6,630 2,227 172 3,886 192 343 30 75	1,000 acres 99 1, 182 7, 826 2, 834 202 3, 709 143 302 31 76 17	1,000 acres 59 1,438 8,994 3,440 414 3,227 196 368 25 74 15	1,000 acres 37 1,383 7, 205 2, 560 2, 704 80 350 21 70
United States 2	5, 413	4, 187	3, 140	2, 046	16, 534	18, 457	21, 160	16, 475

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised. See introductory

Preliminary.
 For other States than those in this table, harvested acreage and seeded acreage are the same.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 4.—Wheat, winter: Acreage seeded and percentage of acreage abandoned, by States, averages, and annual 1932-34

	•							
	Acre	age seeded	in autum	ı of—	Per	centage	abandon	ed 1
New Jersey Pennsylvania North Atlantic North Atlantic Ohio Indiana Illinois Michigan Wisconsin Minnesota Iowa Missouri South Dakota Nebraska Kansas North Central Delaware Maryland Virginia West Virginia North Carolina South Carolina South Carolina Georgia South Atlantic Kentucky Tennessee	Average, 1927-31	1932	1933	1934 2	Aver- age, 1922-31	1932	1933	1934 2
New York New Jersey Pennsylvania	1,000 acres 239 53 982	1,000 acres 233 49 893	1,000 acres 274 50 903	1,000 acres 274 52 903	Percent 3.8 2.4 3.0	Percent 1.5 .5 1.0	Percent 3. 5 2. 0 2. 5	Percent 8. 0 2. 5 4. 5
North Atlantic	1, 274	1, 175	1, 227	1, 229	3, 2	1.1	2.6	5. 2
Ohio Indiana Illinois Michigan Wisconsin Minnesota Iowa Missouri South Dakota Nebraska Kansas	1, 520 1, 781 2, 212 7, 56 36 204 379 1, 677 188 3, 667 13, 255	1, 865 1, 653 1, 713 833 36 188 229 1, 412 348 2, 890 12, 853	1, 782 1, 837 1, 924 825 35 198 312 1, 550 303 3, 063 12, 082	1,871 1,910 1,924 808 28 133 340 1,938 167 3,247 13,049	13. 4 10. 5 11. 6 3. 5 10. 6 11. 0 5. 6 8. 1 18. 6 9. 8 13. 1	1. 0 3. 0 3. 0 1. 0 6. 0 5. 3 11. 0 10. 0 33. 5 20. 1	2.0 5.0 3.0 3.0 12.0 16.0 9.0 4.0 50.0 30.0 47.4	2. 5 2. 0 5. 0 49. 0 20. 0 20. 0 20. 0 30. 0 28. 3
North Central	25, 954	24, 020	23, 911	25, 415	11, 5	16.8	31.0	21. 1
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia	99 469 523 113 350 57 55	86 401 561 130 399 77 71	84 395 590 146 445 87 87	92 403 608 161 467 91 83	2. 3 2. 6 2. 6 4. 6 3. 0 5. 2 10. 2	2. 0 5. 0 1. 5 1. 0 1. 0 2. 5 4. 0	4. 0 1. 5 2. 0 1. 5 2. 0 4. 0 5. 0	4. 0 2. 0 2. 0 3. 5 2. 5 2. 0 3. 0
South Atlantic	1,766	1, 725	1, 834	1,905	3. 3	2.4	2.1	2. 4
Kentucky. Tennessee. Alabama. Arkansas. Oklahoma. Texas.	274 294 3 26 4, 685 3, 883	296 296 4 31 4, 419 4, 491	338 336 8 36 4, 338 4, 087	345 326 8 43 4, 685 4, 373	13. 2 7. 1 8. 3 9. 3 10. 2 17. 1	12. 0 3. 0 3. 0 10. 0 10. 0 25. 6	7. 0 3. 5 10. 0 12. 0 30. 0 56. 1	9. 0 4. 0 16. 0 8. 0 18. 0 30. 0
South Central	9, 165	9, 537	9, 143	9,780	12. 3	17. 2	40.7	22. 5
Montana Idalio Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon. California	683 180 1,545 417 25 193 3 1,324	865 605 202 924 400 47 189 2 1, 392 850 736	788 527 180 1, 205 344 51 170 3 1, 040 746 681	906 580 171 964 361 46 180 3 1, 248 783 735	25. 5 6. 0 12. 7 25. 2 40. 0 3. 1 2. 9 1. 0 16. 5 10. 0	20. 0 7. 0 35. 0 60. 0 45. 9 1. 5 4. 0 5. 0 6. 0 4. 0 11. 1	25. 0 20. 0 50. 0 71. 0 45. 0 2. 0 5. 0 1. 0 60. 0 70. 0	20. 0 11. 0 59. 0 68. 0 2. 0 10. 0 2. 0 10. 0 18. 0 23. 0
Western	6, 809	6, 212	5, 735	5, 977	18. 9	22.7	45.0	29. 5
United States	41, 969	42, 669	41, 850	44, 306	12. 2	16.7	33. 2	21.3
	<u> </u>	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1	1

¹ For entire season, planting to harvest. Includes winter abandonment, which is estimated on May 1 of each season.

² Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 5.—Wheat: Acreage, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1932-34

		Acreage 1	narvested	l		Produ	etion	н	Price for crop of—		
State and division	A ver- age, 1927-31	1932	1933	1934 1	Aver- age, 1927-31	1932	1933	1934 1	1932	1933	1934 1
Maine Vermont	1,000 acres 2 1	1,000 acres 3	1,000 acres 5	1,000 acres 5	1,000 bushels 49 23	1,000 bushels 66	1,000 bushels 120	1,000 bushels 120	Cents 75	Cents 128	Cents 150
New York New Jersey Pennsylvania	259 55 981	201 50 898	233 48 878	260 49 869	4,855 1,240 18,271	4, 086 1, 050 13, 465	4, 512 1, 056 15, 783	4,416 1,127 14,759	58 59 57	88 93 87	100 98 94
North At- lantic	1, 298	1, 152	1, 164	1, 183	24, 438	18, 667	21, 471	20, 422	57. 4	87. 7	95.8
Ohio Indiana Illinois Michigan Wisconsin Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	1,542 2,006 758 103 1,472 426 1,510	1, 585 1, 468 1, 652 702 110 1, 462 273 1, 404 10, 639 3, 958 2, 277 10, 365	1, 833 1, 580 1, 721 818 104 1, 629 1, 359 10, 098 1, 248 2, 437 6, 774	1,740 1,808 1,854 793 108 1,242 287 1,522 3,782 151 2,310 8,669	29, 673 27, 626 34, 372 15, 609 1, 986 20, 974 8, 211 20, 374 107, 531 36, 466 65, 418 176, 235	32, 456 23, 502 24, 978 16, 771 2, 109 20, 839 4, 350 15, 733 110, 396 53, 468 27, 958 120, 178	34, 812 22, 905 27, 418 13, 457 1, 616 16, 665 4, 303 16, 989 72, 115 5, 120 29, 206 57, 504	33, 401 32, 152 29, 495 11, 120 1, 647 12, 534 3, 028 21, 281 21, 196 598 15, 838 79, 700	47 43 42 45 53 44 36 34 36 33	88 86 85 80 81 77 78 82 70 69 72 71	92 90 90 92 100 103 92 88 101 97 89 88
North Cen- tral	37, 995	35, 895	29, 852	24, 266	5 44, 475	452, 738	302, 110	261, 990	37. 4	76. 7	91. 1
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia	475 616 107	79 380 579 116 376 80 74	83 395 550 128 391 74 67	81 387 578 141 434 85 84	2,002 9,375 9,582 1,679 3,661 546 505	908 4, 940 6, 253 1, 276 3, 572 760 703	1, 162 6, 320 7, 425 1, 856 3, 714 592 536	1, 539 7, 934 8, 092 1, 974 4, 340 765 756	57 53 58 60 69 65 67	90 91 93 89 103 105 106	92 93 97 98 108 113 113
South At- lantic	1, 747	1, 684	1,688	1, 790	27, 348	18, 412	21,605	25, 400	59. 5	94. 3	98.4
Kentucky Tennessee Alabama Arkansas Oklahoma Texas	287	270 272 6 31 3,966 3,330	275 286 4 27 3,093 1,973	308 323 7 33 3, 557 2, 861	2, 969 2, 950 31 241 52, 641 39, 653	2, 835 2, 584 60 248 47, 592 28, 293	3,300 2,917 34 216 31,549 14,008	4, 250 3, 392 66 297 37, 348 25, 749	48 60 59 44 32 32	93 96 96 86 68 74	92 99 108 97 82 81
South Cen- tral	7,885	7,875	5, 658	7, 089	98, 495	81, 612	52, 024	71, 102	33. 5	72.9	83. 1
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	1, 219 310 1, 547 277 24 257 15 2, 294 1, 034 641	4,070 1,100 277 680 276 38 260 18 2,203 991 595	3, 551 959 234 548 245 46 254 17 2, 136 903 655	2, 572 906 130 650 125 50 220 15 1, 883 832 524	50, 388 27, 343 4, 039 20, 144 3, 837 554 5, 519 45, 345 22, 701 11, 362	55, 610 28, 360 3, 102 7, 135 2, 027 798 5, 332 461 40, 348 20, 060 11, 126	26, 480 17, 235 2, 138 5, 912 1, 485 1, 288 4, 079 378 43, 044 17, 608 12, 118	28, 174 18, 696 1, 041 5, 776 711 1, 000 3, 147 336 37, 346 12, 944 8, 384	34 31 31 37 35 55 41 59 38 41 53	63 55 62 65 72 80 66 78 60 64 78	90 72 87 86 90 84 85 84 77 77
Western United States.		10, 508 57, 114	9, 548 47, 910	7, 907 42, 235	191, 603 886, 359	174, 359 745, 788	131, 765 528, 975	117, 555	36.9	63. 0 74. 1	88.0
o miles prates.	00,000	1, 114	1.,,,,,,,	12,200	(~0,000	1. 20, 100	, , , ,	200, 200	1 31. 8	1 *** 1	30.0

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 6.—Wheat, winter, durum, and other spring: Acreage, yield, and production, by States, averages, and annual 1933 and 1934

WINTER

	Acres	ige harv	ested	Y	ield per	acre	P	roductio	n
State and division	Aver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1
New York New Jersey Pennsylvania	1,000 acres 249 55 971	1,000 acres 225 48 871	1,000 acres 252 49 862	Bushels 19.0 21.7 18.4	Bushels 19.5 22.0 18.0	Bushels 17.0 23.0 17.0	1,000 bushels 4,674 1,240 18,080	1,000 bushels 4,388 1,056 15,678	1,000 bushels 4, 284 1, 127 14, 654
North Atlantic	1, 274	1, 144	1, 163	18.7	18. 5	17.3	23,994	21, 122	20, 065
Ohio	1, 454 1, 529 1, 866 749 37 166 378 1, 499 112 3, 545 11, 996	1, 828 1, 570 1, 662 808 32 158 208 1, 356 174 2, 023 6, 759	1,737 1,800 1,828 784 18 79 250 1,519 42 2,144 8,659	18. 6 16. 9 17. 2 19. 5 18. 9 19. 1 19. 9 13. 6 13. 3 15. 6 13. 6	19. 0 14. 5 16. 0 16. 5 14. 5 15. 0 18. 0 12. 5 5. 0 12. 8 8. 5	19. 2 17. 8 16. 0 14. 0 11. 5 10. 0 11. 0 4. 0 7. 0 9. 2	29, 431 27, 401 31, 611 15, 440 729 3, 284 7, 422 20, 225 1, 386 62, 866 175, 876	34, 732 22, 765 26, 592 13, 332 464 2, 370 3, 744 16, 950 870 25, 894 57, 452	33, 350 32, 040 29, 248 10, 976 207 790 2, 750 21, 266 168 15, 008 79, 663
North Central		16, 578	18, 860	15.3	12.4	12.0	375, 671	205, 165	225, 466
Delaware. Maryland. Virginia. West Virginia. Worth Carolina. South Carolina. Georgia.	102 475 616 107 340 53 54	\$3 395 550 128 391 74 67	81 387 578 141 434 85 84	19. 0 19. 6 14. 9 14. 4 10. 5 10. 0 9. 1	14. 0 16. 0 13. 5 14. 5 9. 5 8. 0 8. 0	19. 0 20. 5 14. 0 14. 0 10. 0 9. 0 9. 0	2,002 9,375 9,582 1,679 3,661 546 505	1, 162 6, 320 7, 425 1, 856 3, 714 592 536	1, 539 7, 934 8, 092 1, 974 4, 340 765 756
South Atlantic		1, 688	1,790	15. 1	12.8	14. 2	27, 348	21, 605	25, 400
Kentucky Tennessee Alabama Arkansas Oklahoma Texas	212 287 3 22 4, 269 3, 092	275 286 4 27 3,093 1,973	308 323 7 33 3, 557 2, 861	13.6 11.2 10.9 10.6 12.1 12.1	12.0 10.2 8.5 8.0 10.2 7.1	13. 8 10. 5 9. 5 9. 0 10. 5 9. 0	2, 969 2, 950 31 241 52, 641 39, 653	3, 300 2, 917 34 216 31, 549 14, 008	4, 250 3, 392 66 297 37, 348 25, 749
South Central	7, 885	5, 658	7, 089	12. 2	9. 2	10.0	93, 495	52, 024	71, 102
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	636 655 130 1, 237 246 24 182 4 1, 194 864 641	649 484 101 268 220 46 180 2 557 255 655	630 469 74 482 110 50 153 3 936 612 524	14. 9 19. 6 14. 4 12. 0 10. 3 21. 2 18. 1 23. 6 23. 0 21. 2	9. 5 15. 0 9. 0 5. 5 28. 0 13. 0 24. 0 22. 0 19. 5 18. 5	14. 0 17. 5 6. 5 7. 8 5. 1 20. 0 10. 5 20. 0 22. 7 14. 5 16. 0	9, 016 12, 950 1, 707 15, 491 3, 421 554 3, 333 89 29, 344 19, 256 11, 362	6, 166 7, 260 808 2, 412 1, 210 1, 288 2, 340 48 12, 254 4, 972 12, 118	8, 820 8, 208 481 3, 760 561 1, 000 1, 606 60 21, 247 8, 874 8, 384
Western		3, 417	4, 043	17. 7	14.9	15. 6	106, 553	50, 876	63, 001
United States	40, 050	28, 485	32, 945	15. 2	12.3	12.3	632, 061	350, 792	405, 034
		,	DUR	UM	•	•	•	•	•
Minnesota North Dakota South Dakota Montana	231 3, 600 1, 249 25	2, 093 93 36	57 900 11 22	14.8 12.0 11.9 11.9	10.0 7.3 3.5 7.0	12. 0 6. 9 3. 5 7. 0	3, 270 44, 028 13, 890 273	880 15, 279 326 252	684 6, 210 38 154
4 States	5, 105	2,310	990	12.1	7.2	7.2	61, 460	16, 737	7,086

¹ Preliminary.

Table 6.—Wheat, winter, durum, and other spring: Acreage, yield, and production, by States, averages, and annual 1933 and 1934—Continued

OTHER SPRING

	Acre	age harv	ested	Y	ield per	acre	F	roductio	n .
State and division	Aver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1
MaineVermont	1,000 acres 2 1	1,000 acres 5	1,000 acres 5	Bushels 21. 6 19. 5	24.0	Bushels 24. 0	1,000 bushels 49 23	1,000 bushels 120	1,000 bushels 120
New York Pennsylvania	10 11	8 7	8 7	18.0 17.3	15. 5 15. 0	16. 5 15. 0	181 191	124 105	132 105
North Atlantic	24	20	20	18. 6	17.4	17. 8	444	349	357
Ohio. Indiana Illinois. Michigan Wisconsin Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	140 9 66 1,076 48 11 5,960	5 10 59 10 72 1,383 43 3 8,005 981 414 15	3 8 26 9 90 1, 106 37 3 2, 882 98 166 10	20. 3 17. 2 19. 5 18. 1 18. 8 14. 0 15. 8 10. 1 13. 2 8. 6	16. 0 14. 0 12. 5 16. 0 9. 7 13. 0 7. 1 4. 0 8. 0 3. 5	17. 0 14. 0 9. 5 16. 0 10. 0 7. 5 5. 0 4. 0 3. 7	242 225 2, 761 168 1, 258 14, 420 789 149 63, 503 21, 191 2, 553 358	80 140 826 125 1, 152 13, 415 559 39 56, 836 3, 924 3, 312 52	51 112 247 144 1,440 11,060 278 15 14,986 392 830 37
North Central	9, 584	11,000	4, 438	11.4	7.3	6. 7	107, 617	80, 460	29, 592
Montana Idaho Wyoming Colorado New Mexico Utah Nevada Washington Oregon	180 309 30 75 11	2, 866 475 133 280 25 74 15 1, 579 648	1, 920 437 56 168 15 67 12 947 220	13. 0 23. 8 12. 6 14. 7 12. 4 27. 4 25. 4 14. 7 18. 0	7.0 21.0 10.0 12.5 11.0 23.5 22.0 19.5	10. 0 24. 0 10. 0 12. 0 10. 0 23. 0 23. 0 17. 0 18. 5	41, 099 14, 393 2, 332 4, 653 416 2, 186 2, 186 283 16, 001 3, 415	20, 062 9, 975 1, 330 3, 500 275 1, 739 330 30, 790 12, 636	19, 200 10, 488 560 2, 016 150 1, 541 276 16, 099 4, 070
Western	5, 624	6, 095	3,842	15, 1	13, 2	14. 2	84, 777	80, 637	54, 400
United States	15, 233	17, 115	8, 300	12. 7	9.4	10. 2	192, 838	161, 446	84, 349

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 7.—Wheat: Acreage, yield per acre, and production in specified countries; average, 1921-22 to 1925-26, annual, 1931-32 to 1934-36

			Астевде				Yie	Yield per acre	re			1	Production		
Country	Average, 1921–22 to 1926–20	1931-32	1032-33	1933-34	1934-35 1	Aver- age, 1921-22 to 1925-26	1931–32	1932-33	1933-34	1934-351	Avorago, 1921–22 to 1925–26	1931-32	1032-33	1933-34	1934-35 1
NORTHERN HEMISPHERE North America: Cannada United States. Mexico.	1,000 acres 22,083 57,557 2,098 2,098	1,000 acres 26, 201 57, 103 1, 501 16	1,000 acres 27, 182 57, 114 1, 104	1,000 acres 25,901 47,910 1,173	1,000 acres 23,985 42,236 1,179	Bushels 16.6 13.7 5.0 9.2	Bushels 12.3 16.3 10.8 8.4	Bushels 16.3 13.1 8.7 13.9	Bushels 10. 4 11. 0 10. 3	Bushels 11.5 11.8 8.6	1,000 bushels 366, 483 786, 866 10, 388	1,000 busheds 321, 325 932, 221 16, 226 136	1,000 bushels 443, 061 745, 788 9, 658	1,000 bushels 269, 726 528, 975 12, 122	1,000 bushels 275, 252 496, 469 10, 104
dom: and Wales n Ireland	1,746 57 8		1, 288		1,759	***	30.0 35.8 37.2	43.1 49.3 39.6		37.1 40.3 37.8		36, 915 1, 792 106 781	41, 263 2, 240 121 831		
Norway Norway Domnark Netherlands Beleium	352 202 147 330		242 242 242 243 244 244 244 244 244 244		742 742 282 359 379	33448	24.24.28.28.29.24.09.29.29.29.29.29.29.29.29.29.29.29.29.29	8.52.44.85 8.22.28 8.22.28		4.05.44.75 4.09.02 2.29.23			26, 500 10, 997 12, 837 15, 376	29, 201 11, 728 16, 325 15, 067	
Luxemburg. France. Spain. Portugal. Italy.	13, 607 10, 457 1, 078 11, 675		31 13, 428 11, 248 1, 461 12, 185		40 13, 109 11, 101 1, 468 12, 236	7.585	20.25 20.25	8491988 8407		26.5 25.3 14.1 19.0			233, 524 184, 207 23, 400 276, 923		
nd vakia	3, 613 471 1, 523		137 5, 635 2, 064 3, 064		5, 430 5, 830 2, 301	28848 2	28.29.25 20.20.25 20.20.25	88888 8		23.3			183, 830 12, 193 53, 737 64, 463		
Mongary Yugoslay Yugoslay Greeos Bulgaria Rumania Poland Liftuania Lakyla. Bistonia	, 2, 7, 9, 1, 3, 5, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	, r, i, e,	24.1.62.7.4 28.23.1.26.25 28.25.21.26.25 28.25.25 28.25.25 28.25 26.25 2	2,4,1,256 17,700 10,700 10,000	20,0 1,8,7,4, 20,0 8,0 8,0 8,0 8,0 8,0 8,0 8,0 8,0 8,0	44 % & & & & & & & & & & & & & & & & & &	28.7.28.23.2.23.2.24.25.24.26.	11111111111111111111111111111111111111	: 3.2.7.3.3.1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	5.50.50.41.55.55.55.55.55.55.55.55.55.55.55.55.55	89, 773 89, 770 89, 770 89, 770 1, 3, 563 1, 256 739	83, 220 11, 228 135, 300 135, 300 1, 738 1, 738	25, 53, 52, 53, 53, 53, 54, 55, 53, 53, 53, 53, 53, 53, 53, 53, 53	28, 28, 28, 28, 28, 28, 28, 28, 28, 28,	68; 328 77, 315 63, 468 9, 907 9, 908

	1, 520, 000	31, 232 39, 738 15, 800 37, 277	88, 546 340, 365	45, 557	621, 000	2, 951, 000		252, 069 13, 533 137, 000	472, 000	3, 423, 000
1, 018, 893	1, 748, 000	28, 902 31, 998 9, 186 39, 951	99, 636 352, 763	40,376	527, 000	3, 199, 000		35, 307 14, 674 286, 120 10, 227 175, 370 9, 636	542, 000	3, 741, 000
744, 052	1, 436, 000 1, 492, 000	27, 970 29, 237 17, 463 62, 686	71, 135 336, 896	31, 336 8, 576 24 53	471, 000	3, 292, 000		26, 114 5, 407 240, 880 10, 627 213, 927 11, 055	519, 000	3, 281, 000 3, 814, 000 3, 811, 000 3, 741, 000
753, 238	1, 436, 000	29, 783 25, 649 13, 963 46, 073	104, 946 347, 424	30, 892 8, 341 18 53	555, 000	3, 380, 000		21, 187 11, 259 219, 696 13, 713 190, 612 6, 583	474, 000	3, 814, 000
467,857	1, 196, 000	21, 758 26, 716 7, 892 36, 806	336, 276	26, 899 10, 208 64 47	437, 000	2, 891, 000		25, 761 9, 680 203, 388 7, 459 128, 520 6, 640	390, 000	3, 281, 000
		11.1 9.9 8.3 25.9	12.9	28.7				14.7 8.9 10.6		1
12.4		8,50 9,00 9,00 9,00 9,00	13.7	26.8				16.8 12.3 15.9 8.1 11.7	1	
8.7		10.3 7.8 7.3 29.8	10.0	25.1 10.8 12.0 17.7				17.8 5.7 13.5 6.8 13.6		
8.3		11.7 7.0 7.1 27.9	12.0	25.2 10.2 13.2 20.2				4.01.01.01.01.01.01.01.01.01.01.01.01.01.	1	
10.6	1	9.6 7.8 5.6	2.6.6 11.4	22.5 11.6 9.1 11.8				17.8 12.2 12.8 12.8 12.8 29.6		
	77, 300	2,817 4,005 1,908 1,441	6,871 36,062	1, 687	47, 500	202, 500		2, 167 997 17, 198 1, 523 12, 965	37, 200	239, 700
82, 138	78, 000	3, 210 3, 993 1, 764 1, 426	7, 267 32, 970	1,509	44, 700	308, 200		2, 103 1, 189 18, 041 1, 257 14, 992 296	40, 400	248, 600
85, 259	75, 400	2, 713 3, 736 2, 392 1, 762	8, 555 33, 803	1, 247 793 2	46, 500	218, 000		1,466 947 17,789 1,556 16,766	40, 700	258, 700
91, 110	76, 000	2, 537 3, 640 1, 977 1, 049	8, 772 32, 189	1, 228 817 1	45, 300	216,000		1, 517 1, 080 16, 028 1, 736 14, 741	37, 500	253, 500
43, 137	66, 400	2, 272 3, 406 1, 400 1, 462	27, 058 29, 561	1, 197 882 7 4	38, 600	195, 500		1, 446 807 16, 159 868 10, 010 224	31, 000	226, 500
U.S.S.R. European and Aslatic	Estimated European total, excluding U.S.S.R.	Africa: Morocco Morocco Algoria Tunis Egypt.		Japanese Empire: Japan Chosen Taiwan Kwantung	Estimated Asiatic total, excluding U.S.B.R. and China-	Estimated Northern Hemisphere total, excluding U.S.S.R., and Ohina	SOUTHERN HEMISPHERE	Chile Virgins Argentins Union of South Africa Australia New Zealand	Estimated Southern Hemisphere total	Estimated world total, excluding U.S.S.R. and Ohins.

¹ Preliminary.
² Year 1925.

Bureau of Agricultural Economics. Official sources and International Institute of Agriculture. "U.S.S.R." means Union of Soviet Socialist Republics.
Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1834-35 the crop harvested in the Northern Hemisphere countries in 1834 is combined with the Southern Hemisphere harvest which begins late in 1834 and ends early in 1835.

Table 8.—Wheat: Production, world and selected countries, 1890-91 to 1934-35

		North- ern				Selec	ted coun	tries		
Crop year	World, exclud- ing Russia and China	Hemi- sphere, exclud- ing Russia and China	Europe, exclud- ing Russia	Russia ¹	United States	Canada	India	Argen- tina	Austra- lia	France
\$90-91. \$91-92. \$92-93. \$93-94. \$93-94. \$93-94. \$93-95. \$95-96. \$95-96. \$95-96. \$95-97. \$95-98. \$93-99. \$90-190. \$900-1901. \$901-2. \$902-3. \$903-4. \$904-5. \$904-5. \$905-6. \$906-7. \$907-8. \$908-9. \$909-10. \$910-11. \$911-12. \$912-13. \$1914-15. \$916-17. \$191-18. \$918-19. \$919-20. \$920-21. \$921-22. \$922-24. \$924-25. \$928-29. \$928-29. \$928-29. \$928-29. \$929-30. \$931-32. \$932-33. \$933-34. \$934-35.	212172 2172 2172 2172 2172 2172 2172 21	Million bushels to bus	Million bushels 1, 986 1, 084 1, 073 1, 108 1, 1, 109 1, 1, 147 1, 134 1, 135 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 1, 305 1, 307 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	Million bushels 212 173 375 3255 3310 412 340 459 459 459 459 375 622 366 563 360 563 360 563 360 563 360 563 360 563 360 560 560 560 560 560 560 560 560 560 5	Million bushels 449 678 612 502 502 502 502 502 663 655 706 741 629 603 684 684 620 603 603 603 603 603 603 603 603 603 60	Million bushels 42 42 42 43 41 43 47 63 557 86 69 69 69 69 6126 6126 6126 623 161 1224 231 231 234 189 263 234 193 263 395 427 480 567 567 567 567 575 421 321 321 321 321 321 321 321 321 321 3	Million bushels 229 257 2286 271 2261 201 209 255 220 265 227 298 360 253 320 317 229 255 361 371 323 382 250 367 372 373 381 325 335 291 331 331 331 331 331 331 331 331 331 3	Million bushels 31 36 61 61 61 62 61	Million bushels 27 26 33 37 28 88 411 400 48 48 49 127 44 55 56 66 45 72 92 57 165 165 165 165 165 165 165 165 165 165	Million bushel and bus

³ Exclusive of Russian Poland, Lithuania, parts of present Latvia and Ukraine, and 2 Provinces of Transcaucasia.

Includes all Russian territory reporting for years named.
 Total Russian Empire exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

⁵ Beginning with this date production is within post-war boundaries and therefore not comparable with earlier years.
Preliminary.

Bureau of Agricultural Economics.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

Table 9.—Wheat: Stocks on farms, quarterly, United States, 1925-26 to 1934-35

Season		Stocks o	n farms		Season		Stocks or	n farms	
	Oct. 1	Jan. 1	Apr. 1	July 1:		Oct. 1	Jan. 1	Apr. 1	July 1 1
1925–26 1926–27 1927–28 1928–29 1929–30	1,000 bushels 370, 310 378, 871 449, 013 344, 009	1,000 bushels 216, 825 209, 858 268, 332 221, 974	1,000 bushels 79,050 103,871 88,057 134,114 130,729	1,000 bushels 27, 104 26, 743 19, 567 44, 979 60, 092	1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 400, 026 498, 383 415, 760 310, 354 230, 912	1,000 bushels 258, 949 322, 517 273, 012 196, 508 136, 044	1,000 bushels 118,772 169,990 183,185 116,298 93,699	1,000 bushels 38, 039 92, 772 82, 309 60, 323

¹ Includes old crop only.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 10.—Wheat: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

Seese					Pe	rcenta	ge of re	ceipts	during	g				
Season	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sea- son
1924-25 1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-31 1932-33 1933-34	Per- cent 2.1 2.3 1.7 2.7 1.3 5.1 3.9 6.0 4.8	Per- cent 12.9 14.0 22.2 15.0 19.0 25.5 25.2 27.6 18.7 21.5	Per- cent 20. 8 18. 2 20. 6 18. 0 18. 3 22. 3 21. 0 18. 5 19. 6 20. 4	Per- cent 17. 8 18. 2 13. 5 19. 8 17. 2 14. 0 12. 3 9. 5 14. 0 13. 8	Per- cent 14.0 11.2 9.5 12.6 12.0 8.6 7.1 7.5 7.8	Per- cent 7.8 9.0 5.9 7.8 7.2 4.5 4.5 5.0	Per- cent 5.6 7.2 5.3 5.4 4.5 4.7 4.48 3.6	Per- cent 5.3 4.6 4.5 4.2 3.1 4.7 4.0 3.6	Per- cent 4.2 4.1 4.7 4.0 4.3 2.9 4.7 5.8 3.4	Per- cent 2.5 3.0 3.7 3.8 3.5 2.5 3.4 3.4	Per- cent 1.7 3.0 2.7 2.5 2.8 2.5 3.1 3.5 4.3 2.7	Per- cent 3.3 2.9 3.5 2.7 2.7 2.6 3.9 4.0 5.40	Per- cent 2.0 2.1 2.3 1.3 2.1 1.6 1.45 4.7 3.7	Per- cent 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0

Bureau of Agricultural Economics.

Table 11.—Wheat: Production and farm disposition, United States, 1919-20 to 1934-35

,		Used f	or seed		Ground at mills for	
Season	Produc- tion	Total	Home grown ¹	Fed to livestock ¹	home use or ex- changed for flour ¹	Sold or for sale
1919-20 1920-21 1921-22 1922-23 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35 2	952, 097 843, 277 818, 964 846, 649 759, 482 840, 091 669, 142 833, 544 874, 733 912, 961 822, 180 889, 702 932, 221 745, 788	1,000 bushels 90, 858 89, 269 88, 322 85, 140 73, 544 81, 278 79, 540 85, 065 91, 416 84, 577 83, 930 81, 060 80, 098 83, 635 71, 703 75, 476	1,000 bushels 80, 402 87, 735 87, 845 81, 845 71, 806 80, 393 75, 625 82, 971 88, 878 82, 421 83, 244 83, 318 77, 9, 412 68, 156	1,000 bushels 36, 606 20, 611 32, 744 49, 357 66, 857 55, 855 28, 248 34, 383 44, 461 55, 113 59, 152 157, 517 171, 258 122, 493 69, 625 81, 373	1,000 bushels 14, 136 11, 725 11, 358 11, 140 10, 840 10, 553 10, 487 10, 344 9, 286 8, 196 6, 973 10, 538 14, 917 15, 724 15, 442 14, 876	1,000 bushels 723,963 687,017 702,698 609,879 693,290 554,782 705,846 732,108 767,231 641,329 641,329 641,329 652,119 375,694

¹ Relates to quantities used by producers on their own farms. Additional quantities of purchased wheat are so utilized.
² Preliminary. Disposition items are approximations made in March 1935.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 12.—Wheat: United States production, 1928-29 to 1934-35, and exports by classes, 1924-25 to 1933-34

ESTIMATED PRODUCTION

Year beginning July	Hard red spring	Durum	Hard red winter	Soft red winter	White 1	Flour as wheat	Total
1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 202, 128 144, 712 160, 594 70, 376 191, 331 108, 834 53, 791	1,000 bushels 97,766 56,307 59,191 21,266 41,607 18,071 7,561	1,000 bushels 392, 155 370, 390 403, 363 515, 925 280, 245 168, 738 201, 292	1,000 bushels 128, 345 166, 430 178, 794 254, 480 149, 567 147, 689 168, 224	1,000 bushels 92,567 84,341 87,760 70,174 83,038 85,643 65,601	1,000 bushels	1,000 bushels 912, 961 822, 180 880, 702 932, 221 745, 788 528, 975 496, 469

ESTIMATED EXPORTS OF DOMESTIC WHEAT AND FLOUR 2

					1		
1924-25 1925-20 1928-27 1928-23 1028-29 1929-30 1929-30 1930-31 1931-32 1932-33 1933-34	2, 174 6, 000 2, 200 1, 900 600 100	33, 816 26, 834 21, 970 36, 500 47, 500 14, 800 12, 100 4, 700 1, 700	120, 573 9, 677 73, 123 60, 299 35, 014 54, 375 47, 365 75, 521 16, 987 1, 400	8, 333 2, 563 31, 352 12, 800 3, 000 2, 700 2, 600 2, 200	11, 201 19, 157 27, 631 30, 400 15, 400 18, 400 13, 700 14, 000 2, 200 17, 399	65, 313 44, 846 62, 910 60, 260 60, 573 61, 070 55, 110 39, 276 20, 324 18, 202	260, 803 108, 035 219, 160 206, 259 163, 687 153, 245 131, 475 135, 797 41, 211 37, 001
	1	†	}	ł .	i	Ì	l

¹ White wheat in Pacific Northwest region consists of both spring and winter wheat; no attempt has been made to classify this wheat as other than white wheat, part of which is spring and part winter.
² Computed from total exports by customs districts on the basis of inspections of wheat for export by ports and classes in the United States and Canadian Eastern Grain Division.

Bureau of Agricultural Economics.

Estimated production by classes based on questionnaire surveys of local authorities, supplemented by judgment of cereal specialists. Inspection of United States wheat for export data furnished monthly by Federal grain supervision officers at the export markets. Inspections are made at the ports of export. Export figures from reports of the Bureau of Foreign and Domestic Commerce.

Table 13.—Wheat and wheat including flour in terms of grain: Exports from the United States, by months, 1924-25 to 1933-84

WHEAT, GRAIN

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1924-25 - 1925-26 - 1926-27 - 1927-28 - 1928-29 - 1920-30 - 1930-31 - 1931-32 -	5, 295 16, 091 8, 397 4, 153 8, 691 11, 934 12, 731	16, 835 7, 901 29, 075 23, 418 10, 374 12, 094 18, 646 8, 911	9, 391 23, 700 33, 776 17, 979 13, 104 12, 716 8, 397	45, 128 4, 354 17, 589 29, 236 22, 058 8, 767 6, 105 11, 873	27, 831 4, 696 14, 340 20, 731 10, 562 9, 977 3, 266 9, 519	17, 791 3, 695 9, 622 6, 917 7, 641 7, 149 2, 713 7, 896	8, 484 2, 412 8, 078 5, 956 3, 399 8, 245 1, 290 4, 072	7, 387 1, 700 4, 889 2, 276 3, 214 5, 185 137 4, 650	9, 960 3, 770 5, 084 2, 740 3, 487 2, 414 1, 397 5, 749	8, 424 2, 533 11, 363 2, 723 3, 942 3, 050 3, 531 9, 351	9, 368 8, 960 4, 823 11, 741 5, 433 6, 494 7, 284	7, 070 8, 074 7, 459 5, 006 4, 564 8, 066 8, 136 6, 088	76, 365 96, 521
1932-33 1933-34	3, 208	3,899			3, 714 512	1,729	1, 793	729 2,667	456 3, 065	194	14	16	20,887

WHEAT, INCLUDING FLOUR IN TERMS OF GRAIN

1924-25 - 1925-26 - 1926-27 - 1927-28 -	19, 819	12,007 35,479	13, 152 31, 031	9, 113 24, 098	35, 425 8, 794 20, 655 27, 003	8, 437 15, 301	5, 587	4,742 8,997	7, 039 9, 183	6, 452 16, 138	12, 558 14, 123		108, 035
1928-29 . 1929-30 . 1930-31 .	16, 377	17, 338 24, 413	18, 568 19, 352	14, 922 12, 355	16, 195 15, 155 8, 701	12, 428 6, 906	14, 073 5, 731	9, 535 3, 717	7, 321 4, 757	7, 438 7, 107	10, 208 10, 203	12, 475 11, 856	131, 475
1931:-32 1932-33 1933-34	17, 454 4, 841 1, 391	11, 919 5, 613 1, 721	11, 729 4, 226 1, 530	4, 422	5, 985	3, 549			8, 554 2, 105 4, 733		1, 523		

¹ Preliminary.

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the

United States.

The following factor has been used for converting flour into terms of wheat: 1 barrel of flour= the product of 4.7 bushels of grain.

Table 14.—Wheat: Receipts inspected, all inspection points, United States, by months, 1925-26 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Total
1925-26 _ 1926-27 _ 1927-28 _ 1928-29 _ 1929-30 _ 1930-31 _ 1931-32 _ 1932-33 _ 1933-34 _ 1934-35 _	74, 414 168, 040 111, 097 161, 267 234, 335 221, 083 219, 167 112, 764 94, 212	79, 444 142, 833 127, 877 139, 714 171, 098 153, 923 114, 427 85, 520 52, 980	bushels 89, 240 96, 534 136, 744 127, 237 92, 048 95, 619 69, 868 71, 789 42, 772	bushels 51, 953 72, 182 112, 361 130, 017 64, 384 54, 806 64, 505 46, 244 30, 183	bushels 60, 289 55, 067 79, 464 81, 352 36, 369 38, 532 49, 838 32, 003 26, 925	bushels 55, 907 44, 757 53, 284 68, 185 45, 790 44, 049 33, 840 28, 071 24, 338	bushels 33, 716 45, 154 46, 724 46, 115 32, 973 53, 826 38, 989 25, 477 24, 824	bushels 31, 781 47, 062 43, 395 53, 800 40, 215 52, 491 55, 105 19, 592	bushels 27, 681 42, 770 47, 274 49, 912 28, 723 48, 072 27, 238 22, 970	26, 634 37, 169 33, 426 34, 910 25, 327 37, 020 28, 809 30, 539	bushels 30, 733 43, 077 41, 124 40, 499 34, 265 52, 869 34, 642 45, 232	bushels 46, 151 46, 321 26, 480 56, 723 62, 466 62, 660 37, 980 66, 641	1,000 bushels 607, 943 840, 966 859, 250 989, 731 867, 993 914, 950 774, 408 586, 842 462, 777

Bureau of Agricultural Economics. Compiled from reports of licensed inspectors through district offices of Federal grain inspection. The quantity loaded per car varies, but car-lot receipts have been converted to bushels by using conversion factors for crop years as follows: 1925-26, 1,368; 1926-27, 1,380; 1927-28, 1,399; 1928-29, 1,441; 1929-30, 1,455; 1930-31, 1,477; 1931-32, 1,485; 1932-33, 1,479; 1933-34 and 1934-35, 1,500 bushels per car, respectively.

Table 15.—Wheat: Receipts inspected, all inspection points, United States, by classes and grades, 1929-30 to 1938-34

			Gr	ade			
Class and year beginning July							Total
	No. 1	No. 2	No. 3	No. 4	No. 5	Sample	
	1.000	1.000	1.000	1,000	1.000	1,000	1.000
Hard red spring:	bushels	bushels	bushels	bushels	bushels	bushels	bushels
1929-30	85, 142	27,409	14, 971	3,088	1,097	6, 270	137, 977
1930-31	87, 418	29, 508	30, 859	10,742	2,893	1,059	162, 479
1931-32	20,809	10, 508	10, 428	3, 130	1,579	603	47,057
1932-33	61, 985	29, 349	29,096	5, 496	1, 167	808	127, 901
1933-34	62, 685	14, 237	11, 728	2, 208	1,002	952	92, 812
Durum: 1929-30	4, 858	22, 676	4, 707	2, 120	1,409	985	36, 755
1930-31		32, 562	4, 616	1,663	579	349	48, 285
1931-32	1, 286	8, 503	1, 298	374	153	73	11.687
1932-33	3, 235	11,740	1, 534	413	180	86	17, 188
1933-34	3, 585	7, 295	306	72	66	172	11, 496
Hard red winter:	5, -55	.,		,	-		,,,,,
1929-30		226, 191	123, 928	38, 070	12,865	14, 575	526, 561
1930-31	237, 604	193, 528	51, 537	22, 161	12,027	7, 957	524, 814
1931-32	261, 155	229, 722	52, 195	12, 859	9, 942	7, 135	573,008
1932-33	96, 125	145, 624	45, 710	13, 687	10, 437	6, 542	318, 125
1933-34	81, 954	85, 604	20, 421	4, 378	5,034	4, 719	202, 110
Soft red winter: 1929-30		90 OF0	00.010		1 005	1 010	24 000
		28, 879	22,013	4, 596 693	1,085 445	1,913 449	64, 008 59, 431
1930-31 1931-32	40, 728 17, 870	14, 358 38, 357	2,758 12,994	3, 533	1, 414	1.488	75, 656
1932-33	14, 385	26, 156	5, 648	1,056	1, 275	1, 254	49,774
1933-34	13, 849	32, 564	6, 982	1, 445	870	1,051	56, 761
White:	10, 010	02,002	0, 302	2, 220	0.0	2,002	00,.01
1929-30	14, 659	25, 502	4, 105	538	147	387	45, 338
1930-31	13, 391	29, 668	5, 819	645	148	235	49, 906
1931-32	13, 632	21, 273	5, 267	491	94	94	40, 851
1932-33	8, 192	17, 177	6, 877	1, 239	284	371	34, 140
1933-34	11, 172	35, 670	11,811	1,650	258	484	61,045
Mixed:		~~ **			0.004	0.170	
1929-30	12, 520	23, 153	12,820	4, 381	2, 324	2, 156 1, 193	57, 354
1930-31	25, 100 9, 670	26, 800 10, 042	9,702 4,581	5, 206 992	2,034 563	301	70, 035 26, 149
1931-32 1932-33	10, 613	10, 042	6, 337	1,707	1, 229	725	39, 714
1933-34	14, 198	17, 246	4, 533	844	794	938	38, 553
Total:	17, 180	11, 240	2,000	022	l '°	250	90,000
1929-30	233, 633	353, 810	182, 544	52,793	18, 927	26, 286	867, 993
1930-31	412, 757	326, 424	105, 291	41, 110	18, 126	11, 242	914, 950
1931-32	324, 422	318, 405	86, 763	21, 379	13, 745	9.694	774, 408
1932-33	194, 535	249, 149	95, 202	23, 598	14, 572	9,786	586, 842
1933-34	187, 443	192, 616	55, 781	10, 597	8,024	8,316	462, 777

Bureau of Agricultural Economics. Compiled from reports of licensed inspectors through district offices of Federal grain inspection. See 1927 Yearbook, table 15, and 1928 Yearbook, table 15, for data for earlier years. The quantity loaded per car varies, but car-lot receipts have been converted to bushels by using the following conversion factors: 1929-30, 1,455; 1930-31, 1,477; 1931-32, 1,485; 1932-33, 1,479; and 1933-34, 1,500 bushels per car, respectively.

TABLE 16.—Wheat: Commercial stocks, 1926-27 to 1934-35 DOMESTIC WHEAT IN UNITED STATES !

1927-28 21, 052 33, 677 62, 042 78, 811 89, 684 91, 589 88, 581 78, 203 72, 858 68, 791 61, 957 48, 286	Year July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June													
1923-27	Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1923-27		1.000	1 000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	
1923-27.		hushels	hushels	hushels	bushels	bushels	bushels	bushels		bushels		bushels	hushela	
1927-98. 21, 052 38, 677 62, 042 78, 811 89, 654 91, 589 88, 581 78, 203 72, 856 86, 791 61, 957 48, 288 9129-30. 38, 587 63, 133 93, 870 115, 469 139, 498 140, 172 144, 351 129, 646 126, 877 124, 756 1113, 392 96, 059 1929-30. 90, 442 136, 423 186, 347 198, 211 202, 461 189, 928 182, 226 188, 346 160, 674 153, 122 135, 471 120, 303 1930-31. 109, 327 161, 897 201, 319 220, 600 211, 381 206, 618 199, 649 202, 604 208, 651 213, 583 206, 490 209, 110 313-32. 203, 967 225, 727 261, 742 256, 327 244, 043 286, 618 268, 674 217, 719 216, 282 207, 215 186, 649 176, 227 1832-33. 168, 405 175, 918 188, 342 194, 888 191, 829 176, 428 168, 405 155, 552 147, 132 135, 552 124, 395 117, 536 1933-34. 123, 712 134, 946 151, 738 156, 652 151, 294 142, 187 132, 511 116, 472 107, 233 97, 132 88, 821 78, 967 1934-35. 80, 548 115, 922 122, 880 120, 075 108, 518 99, 158	1926-27							66, 340	56, 304	56, 262				
1926-27	1927-28	21,052	33, 677	62,042	78,811	89,684	91, 589	88, 581	78, 203				48, 286	
1993-31	1928-29	38, 587	63, 133	93, 870	115, 469	139, 493	140, 172	144, 351	129, 646	126, 377	124, 756	113, 392	96,059	
1931-32 203, 967 235, 727 261, 742 256, 327 244, 048 236, 616 226, 874 217, 719 216, 282 207, 215 186, 549 176, 227 238 348 342 194, 858 191, 829 176, 428 168, 405 155, 552 147, 132 135, 552 124, 395 117, 536 333-34 123, 712 134, 946 151, 738 156, 652 151, 294 142, 187 132, 511 116, 472 107, 233 97, 132 88, 821 78, 967 934-35 80, 548 115, 922 122, 380 120, 075 108, 518 99, 158 10, 667 10, 472 107, 233 97, 132 88, 821 78, 967 10, 472 10,		90, 442	136, 423	186, 847	198, 211	202, 461	189, 926	182, 226	168, 346	160, 674	153, 122	135, 471	120, 303	
1932-33. 168, 405175, 918 188, 342 194, 858 191, 829 176, 428 168, 405 155, 552 147, 132 135, 552 147, 335 117, 558 123, 712 184, 946 151, 738 156, 652 151, 294 142, 187 132, 511 116, 472 107, 233 97, 132 88, 821 78, 967 1934-35. 80, 548 115, 922 122, 380 120, 075 108, 518 99, 158		109, 327	161, 897	201, 319	220,600	211, 381	206, 618	199, 649	202, 694	208, 651	213, 583	206, 490	209, 110	
1933-34		203, 967	235, 727	261, 742	256, 327	244, 043	236, 616	226, 874	217, 719	216, 282	207, 215	186, 549	176, 237	
UNITED STATES WHEAT IN CANADA 2 1926-27	1932-33	168, 405	175, 918	188, 342	194, 858	191,829	176, 428	168, 465	155, 552	147, 132	135, 552	124, 395	117, 536	
UNITED STATES WHEAT IN CANADA 2 1926-27.	1933-34	123, 712	134, 946	151, 738	156, 652	101, 294	142, 187	132, 511	110, 472	107, 233	97, 132	88,821	78,967	
1926-27.	1934-35	80, 548	115, 922	122, 380	120,075	108, 518	99, 158							
1926-27.							<u> </u>	L	<u> </u>	<u> </u>	<u> </u>			
1, 362 1, 280 4, 249 4, 560 7, 258 5, 156 3, 933 2, 285 1, 680 977 863 2, 314 1928-29. 2, 506 2, 258 2, 546 3, 295 8, 602 8, 280 7, 328 3, 930 2, 139 1, 586 1, 738 4, 865 1929-30. 3, 332 2, 288 4, 450 8, 658 9, 065 9, 101 8, 161 7, 71 6, 613 5, 860 5, 421 4, 359 1930-31. 4, 729 3, 961 8, 812 5, 578 4, 766 4, 790 4, 819 4, 802 4, 951 5, 254 5, 897 7, 881 1931-32. 15, 347 22, 934 32, 236 32, 511 31, 627 29, 341 4, 93 153 28, 652 77, 682 27, 758 28, 872 17, 481 1932-33. 15, 895 15, 364 11, 334 8, 503 7, 728 7, 000 6, 938 6, 742 6, 554 6, 403 5, 384 4, 782 1933-34 4, 047 3, 740 3, 672 3, 114 2, 656 2, 251 2, 249 2, 249 2, 235 2, 229 2, 228 1934-35. 849 1, 049 1, 049 1, 049 1.			U	VITED	STAT	ES W	HEAT	IN CA	NADA	. 2				
1, 362 1, 280 4, 249 4, 560 7, 258 5, 156 3, 933 2, 285 1, 680 977 863 2, 314 1928-29. 2, 506 2, 258 2, 546 3, 295 8, 602 8, 280 7, 328 3, 930 2, 139 1, 586 1, 738 4, 865 1929-30. 3, 332 2, 288 4, 450 8, 658 9, 065 9, 101 8, 161 7, 71 6, 613 5, 860 5, 421 4, 359 1930-31. 4, 729 3, 961 8, 812 5, 578 4, 766 4, 790 4, 819 4, 802 4, 951 5, 254 5, 897 7, 881 1931-32. 15, 347 22, 934 32, 236 32, 511 31, 627 29, 341 4, 93 153 28, 652 77, 682 27, 758 28, 872 17, 481 1932-33. 15, 895 15, 364 11, 334 8, 503 7, 728 7, 000 6, 938 6, 742 6, 554 6, 403 5, 384 4, 782 1933-34 4, 047 3, 740 3, 672 3, 114 2, 656 2, 251 2, 249 2, 249 2, 235 2, 229 2, 228 1934-35. 849 1, 049 1, 049 1, 049 1.			1		1			l	1		1			
1928-29									549	437				
1929-30. 3, 332 2, 288 4, 450 8, 658 9, 065 9, 101 8, 161 7, 517 6, 613 5, 800 5, 451 4, 359 1830-31 4, 729 3, 961 8, 812 5, 578 4, 756 4, 750 4, 819 4, 802 4, 951 5, 254 5, 897 7, 851 1931-32. 15, 347 22, 934 32, 236 32, 511 31, 627 29, 414 29, 153 28, 652 27, 682 27, 578 26, 872 17, 481 1933-34 15, 895 15, 364 11, 334 8, 503 7, 728 7, 000 6, 938 6, 742 6, 554 6, 403 5, 384 4, 782 1933-34 4, 047 3, 740 3, 672 3, 114 2, 656 2, 251 2, 249 2, 249 2, 249 2, 229 2, 228 1934-35 10, 407 3, 740 3, 672 3, 114 2, 656 2, 251 2, 249 2, 249 2, 249 2, 229 2, 228 1934-35 10, 608 10	1927-28		1, 280	4, 249		7, 258	5, 156	3, 933	2, 285	1,680				
1930-31.			2, 258	2, 546										
1931-32					8,658				7,517	6,613				
1932-33.				3,812	5, 5/8	4, 700	4,790	4, 819	4,802	4,951	5, 254			
1933-34				11 224	02,011	21,027	29,414	29, 100						
CANADIAN WHEAT IN CANADA 3 CANADIAN WHEAT IN CANADA 3 CANADIAN WHEAT IN CANADA 3 (1926-27	1932-35				0,003	0.000	9 951		0,742	0,004	0,403		4,782	
CANADIAN WHEAT IN CANADA 3 1926-27		4,037	0, 740	0,012					2, 248	2,200	2, 229	2, 228		
1926-27	1904-00				640	1,010	1,010							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$!		CANA	DIAN	WHE	AT IN	CANA	DA 3	<u>'</u>			<u></u>	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Am	1	1	l	1	ı	ı	ļ.,, ,,,			l	l	l	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1926-27	90 074	20 504	01 700	00 000	61 001	00 405	101, 506	107,835	110, 002	102, 223	07,850	01,744	
1928-30														
1930-31			01,082	20, 904 C1 940	145 790	150 000	127 701	101 190	104 094	179 600	170 600	157 019	110, 120	
1931-32. 107, 8611105, 194] 96, 449]114, 866]152, 863]169, 088]172, 631]173, 593]171, 191]170, 447]159, 982]188, 616 1932-33. 134, 040]116, 767]110, 818]187, 252]225, 518]221, 997]223, 816]219, 866]215, 785]219, 537]217, 309]196, 382 1943-35. 194, 776]189, 926]194, 055]220, 467]241, 245]228, 801]227, 645]224, 015]221, 068]218, 327]207, 355]195, 231 1934-35. 1181, 589]177, 623		110 200	S6 482	84 927	140, (08	167 297	177 000	195, 108	175 711	172 600	160 407	152 000	126,020	
1932-33. 134, 040 116, 767 110, 818 187, 252 225, 518 221, 997 223, 816 219, 866 215, 785 219, 557 217, 309 196, 352 1933-34. 194, 776 189, 926 194, 055 220, 447 241, 245 228, 601 227, 645 224, 015 221, 065 218, 327 207, 355 195, 231 1934-35. 181, 589 177, 623 183, 706 214, 173 236, 959 231, 152		107 881	1105 143	06 440	114 866	159 969	160 089	172 631	173 503	171 101	170 447	150 000	120,001	
1933–34. 194, 776 189, 926 194, 055 220, 467 241, 245 228, 601 227, 645 224, 015 221, 065 218, 327 207, 355 195, 231 1934–35														
1934-35[181, 589[177, 623] 183, 706[214, 178[236, 969]231, 152]		194, 778	189, 926	194 055	220, 487	241 24	228, 601	227, 645	224 015	221 045	218 327	207 355	105 991	
										,, odo	1-10,041	, wo	+30, 431	
		,,	į, omo	-55, .50	,	1-30, 500	,,	1-						
			•		<u></u>									

CANADIAN WHEAT IN UNITED STATES 4

1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1931-33 1933-34 1934-35		13, 610 23, 550 16, 468 6, 244 4, 707 6, 697	3, 789 22, 025 12, 603 6, 227 5, 581 4, 785	7, 548 21, 753 17, 765 9, 116 10, 988 5, 752	18, 291 28, 316 22, 112 12, 596 13, 917 10, 016	33, 902 34, 527 30, 297 23, 480 15, 197 14, 767	35, 764 46, 717 38, 000 32, 266 25, 212 13, 575 14, 038	38, 327 35, 517 26, 954 21, 905 10, 996	19, 260 32, 851 31, 516 18, 085 14, 589 7, 792	11, 848 23, 854 25, 285 11, 554 11, 426 5, 992	6,597 28,772 17,587 2,766 4,619 2,497	25,538 14,372 5,926 5,938 4,609
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Includes domestic wheat in store in public and private elevators in 41 markets and wheat afloat in vessels or barges in harbors of lake and seaboard ports. Does not include wheat in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of wheat intended for local use. Includes United States wheat in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include wheat in transit to Canadian ports.

Includes practically all Canadian wheat held within Canadian boundaries, exclusive of farm and certain

mill stocks.

*Includes Canadian wheat in store and affoat at 10 United States lake and seaboard ports but not Canadian wheat in transit on lakes or canals.

Bureau of Agricultural Economics. Compiled from weekly reports to the grain, hay, and feed market news service. Data for domestic and Canadian wheat in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States wheat in Canada data are for stocks on the Friday nearest the 1st day of the month.

Table 17.—Wheat, including flour: Supply, distribution, and disappearance in continental United States, 1919-20 to 1934-35

			wat O		1168, 15	19-20 6	0 1954-	-30		
					Su	pply				
			S	tocks Jul	y 1					
Crop year beginning July	On farms ¹	In coun- try ele- vators and mills 2	Com- mer- cial stocks ³	In mer- chant mills and ele- vators and stored for others 4	In transit to mer- chant mills and bought to ar- rive 4	Total wheat as grain	Flour in terms of wheat ⁵	New erop ¹	Imports (flour in- cluded) ⁶	Total supply
1919-20 1920-21 1921-22 1921-23 1922-23 1923-24 1924-25 1926-27 1926-27 1927-28 1928-29 1928-29 1920-30 1930-81 1931-32 1933-34 1933-34	19, 567 44, 979	1,000 bushels 19,672 37,304 27,167 28,756 37,117 36,626 25,287 29,501 21,776 41,546 30,252 44,585 64,296 51,060	1,000 bushels 10,873 23,404 9,966 20,342 29,403 38,597 29,285 16,486 16,486 16,486 109,327 203,967 168,405 123,596 80,548	1,000 bushels 21,000 22,000 25,000 25,000 28,000 30,000 22,576 24,505 37,038 31,920 48,279 59,170 41,208 71,052 83,114	1,000 bushels 6,400 9,500 10,600 7,700 9,800 9,800 11,274 10,893 16,237 14,706 12,496 10,088 16,038 14,068	1,000 bushels 76, 701 144, 885 114, 317 136, 959 114, 372 114, 786 104, 946 102, 347 123, 862 246, 725 303, 461 325, 960 384, 564 393, 291 289, 111	7,000 bushels 7,402 10,502 6,947 7,793 10,495 9,616 8,530 9,757 9,019 13,541 120,497 6,886 7,214 6,688	1,000 bushels 952,097 843,277 818,964 846,649 759,482 840,091 669,142 833,544 837,473 912,961 822,180 932,221 745,788 975,469	1,000 bushels 5,511 57,682 17,375 20,031 28,079 6,201 15,679 13,264 11,734 21,442 12,986 12,886 12,886 11,494	1,000 bushels 1,041,711 1,056,346 970,082 988,790 935,015 1,000,286 808,137 961,511 1,021,880 1,067,287 1,095,402 1,233,026 1,277,953 1,146,775,953
					Distr	ibution				
	Ex	ports and	i shipme	nts					Per disaapr	eapita earance
Crop year beginning July	Exports (wheat only) ⁶	Exports flour in terms of wheat ⁶	ship-	Total	Seed require- ments ⁷	Disap- pearance for food, feed, and loss	Carry- over (in- cluding flour) June 30 ⁸	Popula- tion Jan. 1 9	Wheat for food, feed, and loss	Flour in terms of wheat
1919-20 1920-21 1921-22 1921-23 1922-23 1923-24 1924-25 1925-27 1927-28 1928-27 1928-29 1929-30 1930-31 1931-32 1932-33 1932-33	1,000 bushels 122, 431 293, 268 298, 321 154, 951 78, 793 156, 250 145, 999 103, 114 92, 175 96, 521 20, 887 18, 799	1,000 bushels 99,599 76,045 74,245 69,949 81,087 65,313 44,846 62,910 60,260 60,573 61,070 55,110 39,276 20,324 18,202	1,000 bushels 3,180 3,690 3,117 3,064 2,964 2,964 3,180 3,227 3,049 2,800	1,000 bushels 225, 160 373, 003 225, 653 228, 017 162, 944 263, 767 111, 089 222, 340 209, 002 166, 914 156, 294 134, 345 139, 458 44, 690 39, 801	1,000 bushels 90, 172 88, 408 88, 322 84, 432 73, 514 80, 951 91, 416 91, 416 91, 416 85, 036 91, 416 85, 036 91, 416 85, 036 91, 416 85, 036 91, 416 91, 416 92, 920 76, 181	1,000 bushels 570, 992 461, 192 461, 192 473, 997 524, 569 532, 246 502, 805 522, 683 588, 588 555, 530 543, 720 684, 775 666, 792 618, 658 529, 193	1,000 bushels 155, 387 133, 743 122, 110 147, 454 153, 988 123, 316 114, 703 131, 423 132, 884 260, 266 311, 458 332, 846 391, 605 400, 505 295, 799	Thou-sands 105, 711 107, 375 109, 040 110, 705 112, 370 114, 035 115, 700 117, 364 119, 029 120, 694 122, 359 123, 630 124, 511 125, 197 126, 059	Bushels 5, 40 4, 30 4, 35 4, 78 4, 85 4, 60 4, 45 4, 60 4, 44 5, 36 4, 94 4, 20	Bushels 4.26 4.36 4.35 4.32 4.21 4.21 4.21 4.21 4.31 3.71

Bureau of Agricultural Economics.

¹ Based on returns to the Bureau from crop reporters.
2 Based on returns from about 3,500 country mills and elevators.
3 From Bradstreets, 1919-20 to 1929-30; Bureau of Agricultural Economics, 1930-31 to end of table.
4 1919-20 to 1924-25, estimates in absence of actual figures; 1925-26 to date, Bureau of the Census figures raised to represent all merchant mills. Stocks stored for others included beginning July 1930.
5 From Chicago Dally Trade Bulletin.
6 From Reports of Foreign and Domestic Commerce of the United States; shipments are to Alaska Hawaii, and Puerto Rico.
7 Amount of seed used per acre from returns to the Bureau from inquiries sent to crop reporters.
8 For individual items see supply section.

Table 18.—Wheat: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1925-28	Cents 140.3 127.7 127.3 118.1 102.4 70.6 36.3 35.6 978.8	125. 1 123. 5 95. 2 110. 7 74. 0 35. 4 38. 5 74. 7	94. 4 112. 1 70. 3 35. 7 37. 4 71. 1	136. 4 121. 4 113. 7 98. 7 111. 5 65. 6 36. 1 34. 6 63. 6	148.8 123.6 111.4 97.1 103.4 60.0 50.5 32.8 71.1	153. 7 122. 8 113. 9 98. 2 108. 1 61. 3 44. 1	122. 2 115. 2 98. 5 107. 5 59. 1 44. 1 32. 9 69. 4	155. 5 122. 8 116. 2 104. 2 101. 3 58. 7 44. 0 32. 3	146. 0 120. 9 121. 6 104. 7 91. 9 58. 3 44. 2 34. 5	142. 2 117. 2 129. 2 99. 8 93. 4 59. 2 43. 1 44. 8	142. 1 123. 2 144. 3 90. 1 87. 5 59. 9 42. 4 59. 0	138. 9 130. 1 132. 0 86. 8 87. 9 51. 9 37. 3 58. 7	121. 7 119. 0 99. 8 103. 4 67. 0 39. 0 37. 9

¹ Preliminary.

Table 19.—Wheat: Average price per bushel of specified grades at markets named, 1900-1901 to 1933-34

Crop year beginning July—	No. 1 Northern Spring at Minne- apolis	No. 2 Amber Durum at Min- neapolis	No. 2 Hard Winter at Chi- cago	No. 2 Hard Winter at Kan- sas City	No. 2 Red Winter at St. Louis	No. 2 Hard Winter at New York 1	Im- ported red at Liver- pool ²
1900-1901 1901-2 1902-3 1903-4 1904-5 1905-6 1905-6 1906-7 1907-8 1908-9 1908-9 1910-11 1911-12 1912-13 1912-13 1914-15 1916-16 1916-17 1917-18 1918-19 1919-20 1919-20 1919-21 1919-21 1919-22 1929-23 1929-24 1929-25 1927-28 1927-28 1928-29 1928-29 1929-29	Cents 75 72 89 113 88 107 111 109 1005 107 87 120 109 109 109 1176 220 225 227 227 143 120 117 156 118 118 118 118 118 118 118 118 118 11	Cents 69 92 70 64 85 95 90 87 98 85 85 81 122 104 180 200 119 107 106 156 144 155 132 113 119 78 78 78	Cents 72 71 73 81 101 101 109 100 100 94 94 111 114 1157 228 234 227 216 118 119 1106 119 1107 1108 117 1108 117 1108 117 1108 117	Cents 67 68 68 68 77 97 97 97 97 98 99 107 79 88 88 84 84 105 219 242 242 183 133 105 163 135 112 120 76 76 76 75 51	Cents 74 72 72 71 87 103 199 90 70 110 120 163 223 223 223 223 127 121 107 159 159 139 139 139 139 155 55	Cents 84 82 85 98 120 96 912 1104 1100 103 128 208 240 237 255 211 170 180 156 153 131 126 688 689	Cents 87 87 89 90 90 \$955 498 98 91 120 107 112 114 106 105 155 224 225 151 151 152 228 151 151 152 228 151 151 152 255 268 151 152 268 152 268 153 165 155 155 155 155 155 155 155 155 155
1800-04	94	103	94	88	94	106	68

¹⁹⁰⁰⁻¹⁹⁰¹ to 1908-9, averages of monthly high and low, from Annual Statistical Report, New York Produce Exchange, of No. 1 Northern Spring; 1909-10 to 1933-34, averages of daily closing prices in the cash market, from New York Journal of Commerce.

2 Compiled from Broomhali? Yearbooks and Corn Trade News. 1900-1901 to 1925-28, imported red; 1926-27 to 1933-34, average of all parcels at Liverpook.

3 Average for 10 months.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 21. Only monthly prices are comparable.

Bureau of Agricultural Economics.

The prices at Chicago, Minneapolis, Kansas City, and St. Louis are weighted averages. New York and Liverpool are simple averages. The weighted average prices are compiled from daily trade papers of markets named.

Table 20.—Wheat: Weighted average price per bushel of reported cash sales at Minneapolis, St. Louis, Kansas City, and six markets combined, 1925-26 to 1934-35

										,		,	
Grade, market, and year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Weight- ed aver- age
No.1 Dark North-													
ern Spring,	~					~			a				~ .
Minneapolis:	Cents 166	Cents 167	Cents 158	Cents 158	Cents 167	Cents 177	Cents 178	Cents 174	Cents 167	Cents 166	Cents 164	Cents 167	Cents 165
1925–26 1926–27	175	156	148	153	148	148	147	146	143	141	153	157	151
1927-28 1928-29	158 147	150 124	137 126	134 123	134 124	137 122	143 129	142	147 132	163	164 121	153 123	141
1929-30	150	138	137	132	130	132	131	136 125	115	129 114	110	105	126 130
1930-31	96	92	87	83	75	77	77	76	76 72	80	82	76	82
1931–32 1932–53	65 59	66	71 59	72 54	80 50	74 49	77 51	77 50	72 54	73 65	72 76	64 81	71 61
1933-34	107	59 92	90	85	87	84	90	90	89	84	94	104	91
1934-35	108	120	121	115	114	117							
No. 2 Red Winter, St. Louis:	ĺ		1								1	1	
1925-26	159	172	171	170	171	184	194	185	170	171	162	147	169
1926-27	142	134	136	140	136	137	138	135	130	129	142	150	138
1927-28 1928-29	141 147	142 138	142 145	145 144	141 145	144 139	151 142	156 140	169 135	196 125	196 117	179 121	149 139
1929-30	139	132	135	132	129	135	134	123	118	117	114	105	130
1930-31	85	89 47	88 47	87	83 62	83 57	78 57 50	79 57	78	50 57	79	72	83
1931–32 1932–33	48 47	53	54	52 50	47	46	50	49	55 55	69	56 81	49 82	52 55
1933-34	101	92	89	86	90	87	91	91	89	83	87	91	94
1934–35 No. 2 Amber Du-	92	101	104	100	101	104							
rum, Minneap-			j	İ]	1		1	1	1		
olis:													
1925-26 1926-27	164 154	150 153	130 138	129 150	143 161	156 174	157 168	151 160	144 157	149 154	147 158	150 157	144 155
1927-28	153	140	128	123	128	133	130	129	133	141	140	131	132
1928-29	123	108 127	106 128	112	114	110 123	127 119	129	124	118	108	115	113
1929-30	135 87	86	79	125 78	119 70	74	72	111	97 72	99 73	97 77	88 64	119 78
1931-32	61	73	73	79	87	84	87	86	78	72	67	56	76
1932-33 1933-34	54 108	57 102	53 100	51 97	50 100	50 97	52 111	51 109	57 110	68 97	74 109	73 112	58 103
1934-35	132	144	151	145	142	141	111	100	110	87	109	112	100
No. 2 Hard Win-													
ter, Kansas City: 1925-26	154	164	158	158	163	172	178	171	161	159	155	153	163
1926-27	137	131	132	139	137	138	137	135	133	131	142	144	135
1927-28	136	135	131	128	131	132	133	133	138	152	160	147	135
1928-29 1929-30	120 125	106 123	107 124	110 122	112 119	111 121	114 119	118	116 102	110	101	105 89	112 120
1930-31	80	81	78	74	69	71	69	69	70	73	73	68	76
1931-32 1932-33	44 45	43 48	43 48	48 45	59 43	52 42	53 44	5 4	51 48	53 60	54 70	46 76	47 51
1932-33	98	90	87	83	84	80	84	85	82	78	86	89	88
1934-35	93	107	108	102	102	104							
6 markets, all classes and				l		1		1	1	l	1		ļ
grades: 1						İ	l	l	l	l	1		l
1925-26	155. 7	160. 5	144. 8 135. 6	143. 3	153. 5 137. 7	165. 7 139. 5	170.3 133.8		154. 9 133. 6	156. 0 134. 7	153. 8 145. 1	151. 6	155. 0 138. 3
1926-27 1927-28	138. 7	136. 4	128.7	125. 1	125.6	128.0	131.0	132.0	136.6	150.7	151. 4	148.6 141.8	132.9
1923-29	126, 0	109.4	108.9	107. 0	109. 1	107. 4	113, 7	118, 1	114.2	109. 2	101. 1	105.3	110.6
1929-30 1930-31	129.8	125. 7 84. 7	127. 4 79. 0	123. 7 76. 0	121. 2 69. 8	123. 5 72. 5	121.6 71.4	115.8 70.9	103. 9 71. 4	102.5 74.5	100. 9 75. 5	94.1 66.8	121.9 77.1
1931-32	46. 5	50.6	55. 7 55. 1	58.4	68.7	60.0	61.3	59.0	57.8	60.1	60.8	52.8	55. 1
1932-33	47.6	55. 1	55. 1	51.2	48.8	46, 1	48.4	47.9	53. 1	64.4	73.4	77.7	57.0
1933-34 1934-35	100. 3 94. 6	92.3 114.7	89. 1 119. 2	84. 3 113. 8	86. 7 113. 2	83. 0 112. 2	88.3	90.9	88. 1	82.8	93. 7	94.9	91. 2
TD0 1 00	1 22 3		1	1-20.5	1					1	1	1	

¹ Compiled from daily trade papers of markets named. The markets are Chicago, Minneapolis, Kansas City, St. Louis, Omaha, and Duluth. The prices in this section of the table are comparable with prices paid to producers in that the latter are averages of the several prices reported which cover all classes and grades sold by producers.

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minneapolis Daily Market Record, St. Louis Daily Market Reporter, and Kansas City Grain Market Review. Data for earlier years in 1928 Yearbook, table 22.

Table 21.—Wheat. No. 3 Manitoba Northern: Average cash price per bushel at Winnipeg, in terms of United States money, 1925-26 to 1934-35 1

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Aver- age
1925-26	Cents 153 149 153 120 152 90 49 43 75 78	Cents 160 138 145 108 152 88 46 46 65 83	Cents 132 133 131 106 144 74 43 43 61 79	Cents 120 136 127 111 134 68 45 41 54 73	Cents 136 131 124 111 126 60 52 38 60 75	Cents 149 123 124 109 130 48 43 32 55 74	Cents 146 123 123 112 123 47 44 35 59	Cents 144 127 124 120 110 53 48 35 61	Cents 138 130 131 119 100 50 49 38 62	Cents 146 133 141 115 103 54 50 43 61	Cents 144 146 142 107 104 53 49 53 65	Cents 144 149 130 112 98 53 43 57 72	Cents 143 135 133 113 123 62 47 42 62

Average of daily cash closing prices; basis, in store at Fort William and Port Arthur.

Table 22.—Wheat: Average spot price per bushel of parcels of imported wheat at Liverpool, 1925-26 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Total
1925-26	Cents 168 167 161 141 141 104 62 54 79 78	Cents 172 162 160 126 142 106 53 57 67 94	Cents 159 160 151 126 137 91 53 59 73 86	Cents 148 171 149 129 136 86 58 55 160 77	Cents 164 171 147 129 127 81 67 52 68 76	Cents 185 163 148 126 141 74 57 49 65 81	Cents 181 160 149 131 140 68 56 50 69 78	Cents 175 157 146 135 125 70 60 47 66 76	Cents 161 155 151 131 117 67 64 47 67	Cents 171 156 159 125 120 71 64 52 68	Cents 173 165 155 116 115 72 61 61 67	Cents 169 165 147 117 110 67 55 63 67	Cents 169 163 152 128 129 80 59 -54 68

¹ Excluding German (on sample) quotations.

Table 23.—Wheat: Volume of trading in futures at all contract markets, by months and crop years, 1924-25 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1924-25 1925-26 1925-27 1926-27 1927-28 1929-30 1929-30 1930-31 1931-32 1932-33 1932-33 1933-34 1934-35	Mil- lion bush- els 1, 333 1, 460 1, 438 1, 018 996 2, 889 1, 306 677 592 2, 000 1, 089	1,561 1,226 1,144 1,133 2,265 1,531 647 1,214 820	1, 475 1, 156 923 818 1, 401 1, 216 519 831 802	1,090 918 916 1,738 1,160 925 714	1,500 1,227 838 750 1,805 1,094 1,479	972 543 517 1,608 529 864 488	1, 456 704 384 1, 085 1, 334 347 654 518 519	581 508 892 1, 484 369 770	920 923 1,083 1,201 433 859 551	846 1, 590 1, 361 1, 501 706 1, 127 1, 548	1, 222 1, 260 1, 471 1, 253 1, 004 635 787 1, 483	1, 204 1, 164 941 1, 391 1, 377 737 840 1, 864	Mil- lion bush- els 18, 876 18, 345 12, 584 11, 201 12, 195 19, 607 10, 063 10, 147 10, 890 10, 093

Bureau of Agricultural Economics.
Compiled as follows: July 1925-July 1928, Reports on the Grain Trade of Canada; August 1928 to latest date shown, Minneapolis Daily Market Record. Conversions at current rate of exchange September 1931 to end of table; par rate used July 1925-August 1931. Rates are monthly averages as reported by the Federal Reserve Board. Data for earlier years in 1930 Yearbook, table 22.

Bureau of Agricultural Economics. Parcels are less than cargo lots. Prices are per bushel of 60 pounds. Compiled from Broomhall's Corn Trade News. These are simple averages of daily sales prices of parcels at Liverpool. Conversions at par from January 1926 to August 1931, inclusive. Prior to January 1926, and beginning with September 1931, conversions were made at monthly average of current rates of exchange given in Federal Reserve Bulletins.

Table 24.—Wheat: Volume of trading in futures at contract markets, by markets and by crop years, 1924-25 to 1933-34, and monthly for 1934

Year and month	Chi- cago Board of Trade	Chi- cago Open Board	Min- neapo- lis	Kan- sas City	Duluth	St. Louis	Mil- wau- kee	Seattle	Port- land	New York	Oma- ha ¹	Hutch- inson
1924-25. 1925-26. 1926-27. 1927-28. 1923-29. 1929-30. 1930-31. 1931-32. 1932-33.	bushels 16, 587 15, 869	Million bushels 446 602 429 342 387 466 297 334 267 249	Million bushels 928 973 632 824 887 1,248 581 364 589 605	Million bushels 577 546 502 441 576 875 515 773 779 72	Million bushels 190 234 155 272 377 328 220 67 102 735	Million bushels 126. 0 96. 6 69. 5 53. 2 27. 6 22. 2 8. 8 15. 2 10. 8 6. 1	Million bushels 22. 0 24. 0 20. 7 27. 6 25. 0 39. 3 15. 3 17. 6 19. 4 18. 7	Million bushels 0.6 6.9 7.4 7.9 14.4 12.2 5.4 6.0	Million bushels 0. 4 15. 0 12. 8 2. 9 3. 1 3. 3	Million bushels 148. 8 29. 1 25. 4 1. 0	Million bushels	Million bushels
1934 January February March April May June July August September October November December	892 901 922 1,068	16 13 13 11 25 23 14 17 10 12 10 8	31 22 25 44 56 58 55 80 43 39 33 27	30 23 23 47 67 95 94 101 48 52 53 43	3 2 3 4 4 4 3 3 3 2 1 1 1 1	.4 .2 .2 .4 .1 (2)	1.1 1.0 1.1 2.0 1.8 1.6 2.5 1.2 1.4 1.3	.2 .2 .1 .7 .6 .3 .4 .6 .2 .2 .5 .2	(2) (2) (3) (1) (2) (3) (2)			(P) (P) (P) (P) (P) (P) (P) (P) (P) (P)

Trading on Omaha Grain Exchange started June 15, 1930 and was suspended Dec. 7, 1932.
 Less than 50,000 bushels.
 Trading on Hutchinson Board of Trade Association began May 16, 1932.

Grain Futures Administration.

Table 25.—Wheat: Open commitments in all futures combined, Chicago Board of Trade, semimonthly, Jan. 15, 1924–Dec. 31, 1934

Date	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Jan. 15 Jan. 31 Feb. 15 Feb. 28 Mar. 15	Million bushels 98 95 105 107 105	bushe/s 117 114 111 113 108	Mülion bushels 112 109 108 105 100	Million bushels 89 88 88 89 90	bushels 83 84 86 88 85	bushels 116 115 128 142 146	bushels 196 201 194 178 173	Million bushels 132 134 133 135 130	bushels 116 113 117 126 130	Mil/ion bushels 134 133 132 129 125	Million bushels 129 134 131 126 120
Mar. 31 Apr. 15 Apr. 30 May 15 May 31 June 16 June 30 July 15	93 75 166 65 69 82 78	98 93 83 87 97 104 93	92 97 93 89 73 87 89	82 82 69 68 68 75 72 82	95 101 122 102 93 93 87 85	143 147 133 127 134 125 140 164	168 165 140 132 125 127 105 110	127 126 115 93 70 78 79 88	126 120 114 110 112 112 106 111	127 136 148 150 151 160 164 191	116 113 96 90 91 103 117 140
July 31 Aug. 15 Aug. 30 Sept. 15 Sept. 30 Oct. 15 Nov. 15	108 106 104 110 110 118	94 94 98 102 99 112 115	82 101 107 100 96 100 104 110	75 85 79 83 85 89 89	102 112 113 116 111 123 125 130	210 218 216 230 243 246 221 198	126 143 142 162 167 174 185 184	86 95 96 95 94 98 121 127	121 139 157 162 171 165 155 155	167 163 150 151 158 152 137 142	158 163- 158 153 147 135 133
Nov. 30 Dec. 15 Dec. 31	133 124 116	110 105 112	103 96 92	84 75 74	133 128 129	190 190 184	161 155 145	123 118 115	139 139 133	138 138 133	128 125 119

Grain Futures Administration.

The maximum open commitments in Chicago wheat futures during period shown were 248,294,000 bushels, Oct. 16, 1929; the minimum open commitments were 60,720,000 bushels, May 24, 1924.

Table 26.—Wheat, including flour, in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

				Ye	ar begi	nning J	uly			
Country	A ve 1925- - 1929		1930	-31	1931	-32	1932	:-33	1933-	-34 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Canada United States. Argentina. Australia. Hungary. Union of Soviet Socialist Republics Yugoslavia. British India Rumania. Algeria. Tunis. Bulgaria. Chile. Total. PRINCIPAL IMPORTING COUNTRIES United Kingdom. Germany. Italy. France. Belgium. Brazil. Netherlands. China ' Japan. Greece. Czechoslovakia. Irish Free State. Switzerland. Austria.	307, 640 170, 077 159, 377 183, 268 23, 539 17, 731 10, 822 10, 080 6, 528 5, 162 3, 518 1, 869 925 800, 536 11, 369 11, 527 2, 014 4, 170 2, 452 0 943 1, 862 5, 989 0 418 5, 182 0 1, 862 1,	796 15, 815 3 10 3 8 8 6 1, 804 6 1, 804 4 456 30, 385 21, 566 23, 486 23, 486 23, 486 23, 188 20, 055 18, 604 18, 502 16, 461 16, 275	10, 125 6, 286 5, 041 1, 193 847, 229 10, 064 825 2, 652 22, 145 3, 102 0 1, 428 59 7, 953 4, 007	243 19, 059 2 3 8 10, 620 12, 419 909 12 33, 543 230, 449 30, 853 86, 231 36, 892 48, 261 30, 708 36, 830 22, 034 17, 033 17, 030 17, 18, 393 17, 17, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 17, 18, 18, 17, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18	199, 563 135, 797 144, 920 155, 451 18, 064 71, 829 15, 369 3, 37, 481 7, 039 8, 365 11, 7039 4, 936 12, 294 12, 329 4, 936 12, 549 6, 733 0 3, 365 12, 549 12, 329 4, 936 12, 549 12, 329 12,	232 12, 886 1 2, 093 1, 360 6, 678 2, 570 6, 68 19, 839 257, 405 34, 290 38, 421 93, 311 54, 654 31, 595 31, 431 65, 575 29, 977 23, 941 12, 38, 684 19, 902 21, 122 14, 194	267, 342 41, 211 120, 272 148, 552 7, 010 19, 676 2, 169 4, 179 11, 505 7, 672 3, 144 27 629, 921 10, 138 25, 290 8, 294 9, 104 3, 847 900 8, 2, 583 15, 093 4, 162 28 41	167 9, 382 3 3 2, 726 2, 370 1, 675 576 0, 1, 823 18, 749 227, 115 34, 049 21, 465 47, 981 44, 910 30, 473 27, 351 8 53, 838 18, 832 19, 517 11, 552 11, 552 11, 352 19, 313 13, 419 19, 313 13, 429	198, 555 37, 001 144, 849 86, 509 29, 615 33, 787 1, 980 4, 248 12, 435 2, 613 4, 769 553, 893 7, 125 32, 519 8, 921 11, 984 2, 502 2, 196 2, 099 12, 795 3, 199	247
Egypt. Denmark. Sweden. Norway. Union of South Africa. Cuba. Finland. Spain. Poland. Netherlands Indies 7. Syria and Lebanon 4. Latvia 4. New Zealand. Indo-China. Estonia.	162 524 2, 004 253 0 0 528 1, 407 0 3 14 17 45	10, 448 10, 102 9, 992 6, 94 6, 317 5, 647 5, 390 5, 186 4, 820 2, 71 2, 027 1, 658 1, 177 1, 062	24 130 76 173 0 0 169 4,286 0 0 176 176 176 176 176 176 176 176 176 176	9, 699 11, 540 5, 483 8, 275 3, 631 4, 560 4, 878 4, 016 4, 966 1, 966 752	291 0 0 55 3, 762 1, 050 0	7, 682 17, 392 6, 606 8, 887 2, 096 4, 064 4, 197 2, 538 4, 032 1, 364 790 701	53 62 23 154 0 0 20 2, 092 1 694 4 706 0	633 12, 151 3, 640 8, 234 353 4, 146 8, 264 811 3, 600 2, 268 2, 268 2, 270 283 2, 124	13 49 14 185 0 0 77 2, 349 874 0 300 0	240 12, 025 1, 813 8, 557 92 4, 239 0 846 9 2, 375 2, 451 0 688 10 738

Bureau of Agricultural Economics; official sources except where otherwise noted.

¹ Preliminary.
2 Imports for consumption.

² Imports for consumption.
3 -year average.
4 Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.
5 -year average.
6 I year only.
7 Calendar year.
8 Beginning July 1, 1932, figures do not include Manchuria.
9 Java and Madura only.
18 Figure for 11 months only.

Table 27.—Flour, spring wheat, family patent: Average wholesale price per barrel, Minneapolis, 1925-26 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Aver- age
1925-26 1926-27 1927-23 1928-20 1929-30 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	rDol. 8. 78 9. 27 8. 26 7. 63 8. 38 6. 01 4. 56 4. 24 8. 03 7. 59	Dol. 9. 04 8. 50 7. 98 6. 94 7. 96 5. 92 4. 50 4. 43 7. 57 7. 93	Dol. 8.52 7.87 7.52 6.87 7.79 5.54 4.44 7.54 7.89	Dol. 8. 52 8. 08 7. 43 6. 76 7. 38 5. 42 4. 52 4. 59 7. 59	Dol. 8. 81 7. 85 7. 38 6. 68 7. 29 5. 24 5. 01 4. 62 7. 28 7. 47	Dol. 9. 52 8. 02 7. 37 6. 68 7. 54 4. 75 4. 07 7. 37	Dol. 9. 85 7. 95 7. 43 7. 00 7. 29 5. 37 4. 50 4. 11 7. 27	Dol. 9. 46 7. 85 7. 47 7. 40 6. 91 5. 22 4. 42 4. 10 7. 28	Dol. 9. 19 7. 74 7. 88 7. 23 6. 71 5. 07 4. 31 4. 32 7. 15	Dol. 9. 20 7. 75 8. 48 7. 07 6. 67 4. 94 4. 62 4. 92 6. 72	Dol. 9.00 8.23 8.68 6.60 6.43 5.17 4.71 5.41 7.06	Dol. 9.32 8.39 8.12 6.68 6.31 5.08 4.38 5.77 7.44	Dol. 9. 10 8. 12 7. 84 6. 96 7. 22 5. 36 4. 56 4. 50 7. 30

¹ Packed in 98-pound cotton sacks, 1925-26 to 1931-32; sold in bulk, 1932-33 to date; basis all quotations carload lots.

Table 28.—Bread: Average retail price per pound (baked weight) in leading cities of the United States, 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Мау 15	June 15	Aver- age
1925-26 1926-27 1927-28 1928-29 1928-30 1930-81 1931-32 1932-33 1932-34 1933-34 1934-35	Cents 9.4 9.4 9.3 9.2 9.0 8.5 6.2 8.2	Cents 9.4 9.4 9.3 9.2 9.0 8.7 7.4 6.8 8.3	Cenis 9.4 9.4 9.3 9.1 9.0 8.7 7.3 6.7 8.4	Cents 9.4 9.4 9.3 9.1 8.9 7.3 6.7 8.4	Cents 9.4 9.4 9.3 9.1 8.9 8.5 7.3 6.7 8.0	Cents 9.4 9.4 9.2 9.0 8.9 7.2 6.9 8.3	Cents 9.4 9.4 9.2 9.0 8.9 8.2 7.1 6.4 7.9	Cents 9.4 9.4 9.2 9.0 8.8 8.0 7.0 6.4 7.9	Cents 9.4 9.4 9.1 9.0 8.8 7.9 7.0 6.4 7.9	Cents 9.4 9.4 9.1 9.0 8.8 7.7 6.9 6.4 8.0	Cents 9.4 9.4 9.1 9.0 8.8 7.7 6.9 6.5 8.0	Cents 9, 4 9, 3 9, 2 9, 2 8, 8 7, 6 6, 9 6, 6 8, 1	Cents 9. 4 9. 4 9. 2 9. 1 8. 9 8. 2 7. 2 6. 6 7. 8

¹ Beginning August 1933, price is for Tuesday nearest the 15th of month.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics retail prices, monthly. Data for 1913–14 to 1924–25 are available in the 1930 Yearbook, table 26.

Table 29.—Bran, standard: Average price per ton, Minneapolis, 1925-26 to 1934-35 ¹

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Aver- age
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1934-35	Dol. 23, 58 22, 02 25, 13 27, 29 26, 17 19, 33 10, 30 8, 56 18, 18 20, 09	Dol. 24, 20 21, 69 26, 85 24, 12 26, 44 24, 17 10, 55 8, 58 17, 31 23, 34	Dol. 23.09 21.64 25.88 25.49 29.19 21.43 10.02 8.44 14.36 22.43	Dol. 22, 83 21, 33 25, 96 28, 09 28, 21 19, 91 9, 93 7, 93 13, 41 22, 02	Dol. 25. 73 23. 14 28. 41 30. 82 27. 90 17. 97 14. 17 8. 33 13. 71 24. 38	Dol. 26. 34 26. 02 30. 09 31. 69 27. 66 16. 57 13. 04 8. 15 12. 89 29. 03	Dal. 26. 17 26. 48 30. 66 30. 54 26. 58 15. 61 12. 99 8. 27 14. 80	Dol. 23. 68 27. 64 32. 47 28. 64 24. 45 14. 66 11. 65 9. 35 16. 55	Dol. 22, 24 26, 96 35, 68 26, 88 23, 17 17, 87 13, 35 10, 82 19, 29	Dol. 25. 05 27. 31 34. 28 22. 93 27. 43 19. 02 13. 63 11. 82 17. 77	Dol. 23, 30 28, 43 35, 03 22, 38 25, 06 14, 15 10, 74 12, 17 17, 55	Dol. 21. 31 26. 51 29. 68 22. 56 21. 25 11. 38 9. 45 11. 56 21. 45	Dol. 23. 96 24. 93 30. 01 26. 79 26. 13 17. 67 11. 65 9. 50 16. 44

¹ Quoted as follows: Through May 31, 1930, no container nor lots designated; June 2-Oct. 31, 1930, "based on car lots per ton"; beginning Nov. 1, 1930, "car lots, f. o. b. Minneapolis, prompt shipment."

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record. Prices 1909–10 to 1924–25 appear in 1930 Yearbook, table 25.

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record. Prices are simple averages of daily quotations.

Table 30.—Middlings, standard: Average price per ton, Minneapolis, 1925-26 to $1934-35^{-1}$

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Aver- age
1925-26 _ 1926-27 _ 1927-28 _ 1927-28 _ 1929-30 _ 1931-32 _ 1931-32 _ 1933-34 _ 1934-35 _ 1934-35	Dol. 25. 53 22. 96 31. 42 32. 18 28. 42 20. 64 11. 06 9. 57 19. 91 22. 04	Dol. 26. 95 23. 01 34. 46 24. 31 29. 25 25. 10 10. 35 9. 52 19. 59 24. 45	Dol. 26. 37 22. 67 29. 22 27. 44 32. 66 22. 17 10. 35 8. 50 15. 58 22. 52	Dol. 24. 19 22. 31 26. 88 28. 61 32. 08 19. 55 10. 02 8. 08 14. 67 22. 02	Dol. 26, 31 24, 16 28, 72 31, 01 28, 76 17, 49 14, 40 8, 37 14, 94 25, 42	Dol. 25. 28 27. 38 30. 00 31. 21 28. 00 16. 00 13. 03 7. 62 13. 10 31, 34	Dol. 26, 10 27, 35 30, 52 30, 46 26, 46 14, 85 12, 12 8, 10 15, 12	Dol. 23. 71 28. 61 32. 71 28. 31 24. 11 13. 52 11. 01 8. 78 16. 30	Dol. 22. 03 28. 46 35. 85 26. 28 22. 71 17. 36 12. 42 10. 28 17. 92	Dol. 24. 20 27. 79 34. 33 22. 76 26. 74 18. 52 11. 34 16. 68	Dol. 21. 77 29. 13 37. 14 21. 98 25. 21 13. 85 10. 72 12. 61 16. 96	Dol. 21. 60 29. 10 35. 30 22. 64 22. 09 11. 95 9. 13 12. 40 22. 12	Dol. 24. 50 26. 08 32. 21 27. 27 27. 21 17. 58 11. 51 9. 60 16. 91

¹ Quoted as follows: Through May 31, 1930, no container nor lots designated; June 2-Oct. 31, 1930, "based on car lots per ton"; beginning Nov. 1, 1930, "car lots, f. o. b. Minneapolis, prompt shipment."

Bureau of Agricultural Economics; compiled from the Minneapolis Daily Market Record. Prices are simple averages of daily quotations. Data for earlier years in 1928 Yearbook, table 30.

Table 31.—Rye: Acreage, production, value, and foreign trade, United States, 1919-34

				Price		Price per bushel	Foreign	trade, ind beginnir	duding flo ng July 3	ur, year
Year	Acre- age har-	Aver- age	Produc-	per bushel received	Farm value, basis	of No. 2 rye at Minne-			Net ex	ports 4
	vested	yield per acre	tion	by pro- ducers Dec. 1 ¹	Dec. 1 price	apolis, year begin- ning July ²	Domes- tic ex- ports	Imports	Total	Percent- age of produc- tion
1010	1,000 acres	Bushels	1,000 bushels	Cents	1,000 dollars	Cents	1,000 bushels	1,000 bushels	1,000 bushels	Percent
1919 1919 1920 1921 1922 1923	7, 679 7, 168 4, 825 4, 851 6, 757 4, 936	9. 9 11. 0 12. 8 12. 6 14. 9 11. 3	75, 992 78, 659 61, 915 61, 023 100, 986 55, 961	145. 9 146. 4 84. 0 63. 9 59. 3	114, 801 90, 626 51, 274 64, 523 33, 168	160 161 92 75 65	41, 531 47, 337 29, 944 51, 663 19, 902	1, 077 452 700 99 2	40, 454 46, 885 29, 244 51, 564 19, 900	51. 4 75. 7 47. 9 51. 1 35. 6
1924 1924 1925 1926 1927 1928 1929	3, 744 3, 941 3, 800 3, 419 3, 458 3, 310 5, 053	14.9 15.0 11.3 10.3 15.1 11.7	55, 674 59, 076 42, 779 35, 361 52,111 38, 591 \$4, 303	95. 2 79. 1 83. 0 83. 5 83. 6	56, 261 33, 819 29, 348 43, 487 32, 255	114 88 98 104 95	50, 242 12, 647 21, 698 26, 346 9, 488	1 1 2 1	50, 241 12, 646 21, 697 26, 345 9, 487	85. 0 29 6 61. 4 50. 6 24. 6
1929 1930 1931 1932 1933 1934 6	3, 110 3, 612 3, 104 3, 344 2, 349 1, 937	11. 4 12. 8 10. 4 12. 2 9. 0 8. 3	35, 482 46, 275 32, 290 40, 639 21, 150 16, 040	85. 7 44. 0 33. 6 27. 6 61. 8 74. 6	30, 395 20, 366 10, 863 11, 198 13, 071 11, 961	90 51 42 41 69	2, 600 227 909 311 21	1 88 1 14 12, 019	2, 599 139 908 297 \$ 11, 998	7.3 .3 2.8 .7

¹Beginning with 1919 prices are weighted average prices for crop marketing season.
²Prices are from Minneapolis Daily Market Record and are averages of daily prices weighted by car-lot

sales.

Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce. Rye—imports for consumption, 1919-34. Rye flour—imports for consumption, 1919-34. Rye flour converted to rye on the basis that I barrel of rye flour is the product of 6 bushels of grain.

Domestic exports minus imports for consumption. (See introductory text.)

Net imports.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns.

Table 32.—Rye: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

State and division		• 				• .						
Average 1933 1934 1938		Acres	ige harv	ested	Yie	eld per a	ere	P	roducti	o n		
New York	State and division	age.	1933	1934 1		1933	1934 1	age.	1933	1934 1	1933	1934 1
Ohio	New York New Jersey Pennsylvania	acres 21	acres 16 22	acres 20 19	els 14. 8 17. 0	els 15. 0 16. 0	els 12. 5 18. 0	bushels 322 467	bushels 240 852	bushels 250 342	74 73	84 78
Indiana	North Atlantic	162	157	151	14.6	14.0	12.8	2, 361	2, 198	1,936	69. 5	74. 6
Delaware	Indiana Illinois Michigan Wisconsin Minnesota Iowa Miscouri North Dakota South Dakota Nebraska	92 155 192 398 45 17 1, 196 264 275	97 50 125 226 291 33 11 550 190 214	130 60 146 221 291 41 15 198 82 182	12. 4 14. 8 13. 0 12. 2 15. 8 16. 1 9. 5 11. 3 11. 1	10. 0 12. 5 10. 5 10. 0 12. 5 13. 0 7. 5 6. 5 4. 0 8. 0	11. 5 10. 5 9. 0 8. 0 8. 5 8. 5 8. 0 4. 0 4. 0	1, 138 778 2, 027 2, 329 6, 269 688 167 13, 759 3, 193 3, 234	970 625 1,312 2,260 3,688 429 82 3,575 760 1,712	1,495 630 1,314 1,768 2,474 348 120 1,030 328 728	65 68 60 62 63 75 56 49	69 757 73 78 90 71 82
Maryland 18 17 20 14.0 13.0 15.0 256 221 300 80 77 Virginia 45 55 55 50 11.4 10.5 11.0 574 578 550 83 87 78 West Virginia 12 12 12 11.1 12.0 10.0 145 144 120 74 79 North Carolina 55 60 66 7.6 7.0 7.5 444 420 495 94 100 South Carolina 8 7 8 8.5 7.0 7.5 444 420 495 94 100 South Carolina 8 7 8 8.5 7.0 7.5 444 420 495 94 103 115 South Atlantic 157 169 175 9.7 9.1 9.7 1,664 1,536 1,699 S7.4 91.5 Kentucky 16 12 12 11.7 <td>North Central</td> <td>2, 754</td> <td>1,858</td> <td>1, 451</td> <td>12.6</td> <td>8.7</td> <td>7.7</td> <td>34, 479</td> <td>16, 179</td> <td>11, 230</td> <td>58. 7</td> <td>71.9</td>	North Central	2, 754	1,858	1, 451	12.6	8.7	7.7	34, 479	16, 179	11, 230	58. 7	71.9
Kentucky 16 12 12 11. 7 11. 0 11. 5 190 132 138 80 83 Tennessee 16 16 15 7. 1 6.5 5.5 109 104 82 90 94 Okthoma 8 5 6 9.0 7.5 9.0 81 38 54 69 87 Texas 3 2 3 10.6 6.0 11.0 31 12 33 71 71 South Central 43 35 36 9.4 8.2 8.5 411 286 307 82.2 85.3 Montana 65 50 35 11.4 7.0 6.0 735 350 210 40 60 Idabo 4 3 4 11.7 11.0 9.0 45 33 36 49 64 Wyoming 33 23 16 7.9 5.5 4.5<	Maryland Virginia West Virginia North Carolina South Carolina	18 45 12 55 8	17 55 12 60 7	20 50 12 66 8	14. 0 11. 4 11. 1 7. 6 8. 5	13. 0 10. 5 12. 0 7. 0 7. 0	15.0 11.0 10.0 7.5 7.5	256 574 145 444 73	221 578 144 420 49	300 550 120 495 60	80 83 74 94 124	77 87 79 100 136
Tennessee 16 16 15 7.1 6.5 5.5 109 104 82 90 94 Oklahoma 8 5 6 9.0 7.5 9.0 81 38 54 69 87 Texas 3 2 3 10.6 6.0 11.0 31 12 33 71 71 71 South Central 43 35 36 9.4 8.2 8.5 411 286 307 82.2 85.3 Montana 65 50 35 11.4 7.0 6.0 735 350 210 40 60 Idaho 4 3 4 11.7 11.0 9.0 45 33 36 49 64 Wyoming 33 23 16 7.9 5.5 4.5 262 126 72 44 77 Colorado 64 18 32 8.6 6.5	South Atlantic.	157	169	175	9. 7	9.1	9. 7	1, 664	1, 536	1, 699	87.4	91.5
Montana 65 50 35 11.4 7.0 6.0 735 350 210 40 60 Idaho	Tennessee Oklahoma	16	16 5	15 6	7. 1 9. 0	6. 5 7. 5	5. 5 9. 0	109 81	104 38	82 54	90 69	94 87
Idaho	South Central	43	35	36	9.4	8.2	8. 5	411	286	307	82. 2	85.3
	Idaho	33 64 3 15	3 23 18 3	16 32 3 14	11. 7 7. 9 8. 6 8. 8 10. 8	11. 0 5. 5 6. 5 7. 0 7. 0	9. 0 4. 5 5. 5 5. 0 8. 5	45 262 546 25 178	33 126 117 21 84	36 72 176 15 119	49 44 49 63 61	64 77 80 76 72
United States 3, 319 2, 349 1, 937 12.4 9.0 8.3 40, 950 21, 150 16, 040 61.8 74.6	Western	203	130	124	9.9	7.3	7.0	2,034	951	868	49. 7	71.7
	United States	3, 319	2, 349	1, 937	12.4	9.0	8.3	40, 950	21, 150	16, 040	61.8	74.6

¹ Freliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 33.—Rye: Acreage, yield per acre, and production in specified countries, average 1921-22 to 1925-26, annual 1931-32 to 1934-35

			Acreage		No. of the last		Yie	Yield per acre	e e				Production		
Country	Average 1921-22 to 1925-26	1981~32	1931-32 1932-33	1933-34	1934-351	Average 1921–22 to 1925–26	1931-32	193233	1933-34 1934-35	1934-35 1	Average 1921–22 to 1925–26	1931-32	1932-33	1933-34	1934-351
NORTHERN HEMISPHERE North Americs: Canada United States.	1,000 acres 1,386 4,857	1,000 acres 778 3, 104	1,000 acres 774 3,344	1,000 acres 583 2,349	1,000 acres 735 1,937	Bushels 14. 4 13. 2	Bushels 6.8 10.4	Bushels 10. 9 12. 2	Bushels 7.4 9.0	Bushels 7.4 8.3	1,000 bushels 19, 994 63, 965	1,000 bushels 5, 322 32, 290	1,000 bushels 8,470 40,639	1,000 bushels 4,327 21,150	1,000 bushels 5, 437 16, 040
Total	0,243	3,882	4, 118	2, 932	2,672	13.4	9.7	11.9	8.7	8.0	83, 959	37,612	49, 109	25, 477	21, 477
Burope: Norwey Sweden Demmark Nofelerlands Belgum Luxemburg France Spaln Portugal Idaly Switzerland Germony Germony Austria Creechoslovakia Eumania Fumania 836 836 836 836 836 837 10 10 10 10 10 10 10 10 10 10 10 10 10	15 25 25 25 25 25 25 25 25 25 25 25 25 25	16 51 51 51 51 51 51 51 51 51 51 51 51 51	16 540 540 573 573 573 573 573 671 671 671 671 671 671 671 671 671 671	115 175 175 175 175 196 1, 669 1, 663 1, 632 1, 632	2	28 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	8888444577148888864454778444 6-48-48-6-48-6-48-6-48-6-48-6-48-6-	25.25.25.25.25.25.25.25.25.25.25.25.25.2	28882 2882 2882 2882 2882 2882 2882 2882 2882 2882 2882 2882 2882 2882 2	780 13, 162 13, 163 16, 331 20, 564 27, 721 16, 222 255, 937 16, 222 16, 222 16, 223 16, 223 16, 223 16, 223 16, 223 16, 223 16, 223 16, 223 16, 223 16, 223 17, 10 17, 10 18, 10	11, 146 14, 146 14, 167 14, 167 14, 167 16, 102 16, 102 16, 102 17, 102 18, 103 19, 103 11, 10	11, 084 12, 084 13, 874 13, 874 14, 672 14, 873 14, 874 14, 874 14, 874 14, 874 16, 874 17, 17, 17, 17, 17, 17, 17, 17, 17, 17,	438 18, 128 12, 602 22, 310 22, 310 23, 310 34, 510 34, 20, 848 11, 002 11, 002 11, 002 10, 802 20, 802 20, 117 20, 11		
Total European countries reporting	39, 757	40, 531	40, 291	41, 170	40,603	19.6	19.0	83.0	24.3	20.9	778, 811	770, 271	926, 297	998, 877	849, 896

855, 000	871, 373	892, 000	17, 716		911, 000
784,000 776,000 982,000 1,003,000 855,000	975, 406 1, 024, 354 871, 373	875,000 832,000 992,000 1,045,000	12.2 3,001 9,744 12,698 9,330		880,000 843,000 1,007,000 1,066,000 911,000
932, 000		992, 000	12, 698		1,007,000
776,000	807, 883	832, 000	82 9, 744	54	843, 000
784, 000	20.1 862,770 807,883	875, 000	64 3,061	928	880,000
1			10.2 10.0 10.3 12.2	1 1	
1 1 1 1	23.2		10.3		1
1	22.0	1	10.0		1
	18.2	1 1 1	11.7	13.5	
	18.8		16.0 11.0	12.8	
41,000	43, 276	45, 100	1,458		47, 100
41, 600	46, 000 44, 413 44, 400 44, 102 43, 276	47, 100 45, 900 45, 500 45, 400 45, 100	059 1, 259		47, 700 47, 400 47, 200 47, 300 47, 100
40,700	44, 409	45, 500	1,259		47, 200
41,000	44, 413	45, 900	959	4	47, 400
40, 500			279		
Estimated European total, excluding Union of Soviet Socialist Republics 40, 500 41, 000 40, 700 41, 600 41, 000	Total Northern Hemisphere countries reporting all years. Estimated Northern Hemisphere	total, excitaing Union of Soviet Socialist Republics and China	Chile. A'rentire.	Union of South Aires.	Estimated world total, excluding Union of Soviet Socialist Republics and China.

Preliminary. 4-year average.

Bursan of Agricultural Economics.

Both screeges and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere have a southern Hemisphere which he will be southern Hemisphere with the Sou

TABLE 34.—Rue: Production, world and selected countries, 1894-95 to 1934-35

		North-				Sele	cted coun	tries		
Crop year	World, exclud- ing Russia and China	ern Hemi- sphere, exclud- ing Russia and China	Europe, exclud- ing Russia	Russia ¹	United States	Ger- many	France	Poland	Hun- gary	Czecho- slovakia
1894-95. 1895-96. 1896-97. 1897-98. 1899-1900. 1900-1. 1901-2. 1902-3. 1904-5. 1905-6. 1906-7. 1907-8. 1908-9. 1909-10. 1910-11. 1911-12. 1912-13. 1913-14. 1914-15. 1915-16. 1915-16. 1916-17. 1917-18. 1918-19. 1921-22. 1922-23. 1923-24. 1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1928-29. 1928-29. 1929-30. 1830-31. 1931-32. 1932-33. 1933-34.	Milition bushels 710 648 710 648 710 719 646 752 705 671 752 778 744 820 827 864 827 864 827 864 827 864 829 827 864 829 829 829 829 829 829 829 829 829 829	Million bushels 709 661 717 644 721 704 670 688 730 762 750 777 778 742 819 864 810 862 862 862 862 862 861 681 681 681 681 681 681 681 681 681	Million bushels 668 668 668 669 664 6629 720 779 810 821 768 466 476 586 720 822 766 770 821 769 821 7	Million bushels 883 7790 654 7788 912 920 755 919 919 910 765 766 815 790 904 757 614 7715 775 896 887 79741 896 981 952 760 8975 952 9868 886 887 955	Million bushels 27 32 32 32 32 26 27 31 34 42 28 31 30 28 44 47 47 62 62 61 101 569 43 35 52 39 36 46 41 12 16	Million bushels 328 328 336 322 356 342 357 321 374 414 428 457 411 410 360 228 260 228 260 317 226 329 329 344 299	Million bushels 752 770 488 667 659 558 466 553 559 556 444 449 550 444 333 325 533 317 448 334 334 334 334 334 334 334 334 334	108 74 176 203 241 276 274 2241 278 223 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 223 2241 278 223 2241 278 223 2241 278 223 223 2241 278 223 2241 278 223 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 2241 278 223 224 224 224 224 224 224 224 224 224	Million bushels 58 47 47 451 466 553 554 422 457 557 556 45 45 45 45 33 33 31 32 32 32 33 33 33 33 33 33 33 33 33 33	Million bushels

Bureau of Agricultural Economics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

¹Includes all Russian territory reporting for the years shown.

²Exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

³Exclusive of Russian Poland, Lithuania, parts of Latvia and the Ukraine, and the 2 Provinces of Batum

^{*}Beginning with this year, estimates for the present territory of the Union of Soviet Socialist Republics exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924 produced 8,646,000 bushels.

Beginning with this year post-war boundaries, therefore not comparable with earlier years.

Preliminary.

Table 35.—Rye: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

Year					Perce	ntage o	f recei	pts du	ring—				
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Year
1924-25 1925-26 1926-27 1927-23 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34	Per- cent 3. 9 5.*2 8. 0 4. 7 4. 5 12. 3 11. 2 11. 7 7. 5	Per- cent 16. 9 19. 2 20. 1 19. 0 19. 5 34. 0 32. 7 21. 6 17. 4 23. 3	Per- cent 25. 4 23. 3 19. 7 25. 6 27. 0 18. 0 23. 0 14. 7 13. 3 14. 2	Per- cent 23. 3 12. 4 13. 0 17. 5 16. 3 11. 6 11. 7 10. 7 8. 6 9. 8	Per- cent 10.77 8.55 9.36 6.67 8.61 7.3	Per- cent 7.0 8.9 6.0 5.8 6.1 6.0 4.2 5.4.7 4.4	Per- cent 5.0 6.6 6.0 4.4 4.5 3.4 2.6 6.0 4.6 3.7	Per- cent 3.1 4.6 6.0 4.1 5.1 2.3 5.5 3.6	Per- cent 1.7 3.1 3.7 2.9 1.7 1.9 5.2 4.7	Per- cent 1.4 2.4 2.4 1.9 1.4 1.9 8.4 6.6	Per- cent 1.2 2.8 3.0 1.7 1.4 1.5 1.8 3.3 9.2 6	Per- cent 0.8 2.8 3.4 1.3 1.5 1.2 1.6 2.4 14.0 2.7	Per- cent 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 38.

Table 36.—Rye: Production and farm disposition, United States, 1924-25 to 1934-35

Season	Produc- tion	Used for seed	Fed to live- stock	Ground at mills for home use or ex- changed for flour	Sold or for sale	Season	Produc- tion	Used for seed	Fed to live- stock	Ground at mills for home use or ex- changed for flour	Sold or for sale
1924-25 1925-26 1926-27 1927-28 1928-29 1920-30	1,000 bushels 59,076 42,779 35,361 52,111 38,591 35,482	1,000 bushels 6,609 6,602 6,075 6,369 5,784 6,480	1,000 bushels 10, 136 5, 219 6, 767 6, 538 6, 679 7, 373	1,000 bushels 717 651 586 521 458 390	1,000 bushels 41, 614 30, 307 21, 933 38, 683 25, 670 21, 239	1930-31 1931-32 1932-33 1933-34 1934-35 1	1,000 bushels 46, 275 32, 290 40, 639 21, 150 16, 040	1,000 bushels 6,888 6,752 6,149 6,545 5,799	1,000 bushels 19,038 14,100 18,827 7,657 6,151	1,000 bushels 390 390 390 390	1,000 bushels 19, 959 11, 048 15, 273 6, 558 3, 700

Preliminary. Disposition items are approximations made in March 1935. Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 37.—Rye: Receipts graded by licensed inspectors, all inspection points, 1924-25 to 1933-34

			Grade			
Year beginning July	No. 1	No. 2	No. 3	No. 4	Sample	Total
1924-25. 1925-26. 1925-27. 1927-28. 1929-30. 1930-31. 1931-32. 1931-32. 1932-33. 1933-34.	Cars 27, 977 3, 969 3, 892 10, 659 1, 787 8, 985 5, 804 2, 071 3, 821 4, 559	Cars 24, 251 11, 730 9, 921 15, 573 13, 081 10, 611 9, 320 5, 531 7, 713 6, 669	Cars 8, 841 5, 111 5, 794 4, 976 6, 646 1, 642 1, 198 927 721 2, 570	Cars 2, 957 1, 794 3, 597 1, 409 1, 994 475 225 240 261 194	Cars 876 494 1, 445 564 626 288 103 71 71 1, 530	Cars 64, 902 23, 098 24, 649 33, 181 24, 134 22, 001 16, 650 8, 840 12, 587 15, 522

Bureau of Agricultural Economics.

Table 38.—Rue: Commercial stocks, 1926-27 to 1934-35 DOMESTIC RYE IN UNITED STATES 1

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June
	2, 499 6, 632 12, 481 10, 154	1, 454 2, 112 6, 614 12, 073 9, 838 8, 955 11, 273	2, 091 1, 351 8, 561 14, 248 9, 405 9, 052 11, 998	2, 608 2, 684 9, 771 17, 302 10, 095 8, 700 12, 968	10, 376 8, 485 13, 457	1,000 bushels 2,970 5,589 12,033 17,173 10,431 8,030 14,153 13,425	1,000 bushels 13, 092 3, 281 5, 934 13, 997 16, 361 10, 223 7, 993 13, 735	1,000 bushels 12,880 3,915 6,185 14,536 15,629 10,085 7,936 12,936	13, 897 4, 321 6, 440 14, 379 14, 270	1,000 bushels 13,905 5,090 6,914 14,285 12,903 10,124 7,688 11,621	1,000 bushels 7, 818 5, 544 6, 598 13, 701 10, 990 9, 493 8, 006 11, 002	1,000 bushels 2,522 2,662 6,532 12,572 10,599 9,428 8,806 10,505
		,	JNITE	D STA	TES F	YE II	CAN	ADA 2				
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	750 1, 182 3, 789 1, 827	589 449 1, 255 3, 761 1, 792 160 1	686 357 1,540 3,432 1,775 121 0	1, 385 838 2, 804 3, 139 1, 229 89 0	1, 390 1, 248 2, 883 2, 792 821 99 0	1, 208 1, 478 2, 900 2, 113 782 99 0	1, 658 930 1, 707 2, 726 2, 131 754 99 0	1,704 772 1,425 2,720 2,128 732 99 0	1, 583 351 1, 255 2, 714 2, 126 675 99 0	1,384 259 1,310 2,692 2,119 250 99 0	3, 379 47 1, 367 2, 871 2, 110 213 99 0	869 512 1,379 3,821 1,911 295 1
			CAN	ADIA	N RYI	E IN C	ANAI)A 3	· · · · · · · · ·	•		'
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	7, 937 12, 602 7, 066 5, 036	1, 149 1, 180 3, 282 7, 519 12, 161 5, 238 5, 401 3, 815	912 603 3, 982 8, 541 12, 356 4, 753 5, 180 3, 436	2, 444 2, 444 5, 898 10, 907 12, 306 4, 928 4, 687 4, 014	3, 479 3, 448 7, 268 12, 546 13, 021 4, 750 4, 170 4, 042	3, 052 3, 595 8, 087 12, 780 12, 202 4, 359 4, 060 3, 970	3, 546 4, 137 4, 834 8, 380 13, 135 11, 473 4, 441 4, 024	3, 758 4, 787 4, 760 8, 348 13, 150 11, 161 4, 475 3, 985	3, 842 4, 963 4, 571 8, 517 13, 059 10, 994 4, 579 3, 980	3, 853 4, 773 4, 423 8, 307 13, 230 10, 904 4, 635 3, 940	3, 064 4, 525 4, 019 8, 112 13, 255 10, 345 4, 655 3, 842	1, 445 2, 668 3, 907 7, 992 12, 547 8, 921 4, 855 3, 837
	,	C	ANAD	IAN R	YE IN	UNIT	ED ST	TATES	4	,		
1926-27 1927-28 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33 1932-33 1933-34 1934-35	248 380 188 2 498	50 237 394 187 2 347 192 54	20 12 432 172 2 412 283 104	124 83 320 239 390 412 260 50	441 205 429 430 388 502 374 0	802 258 431 651 1,405 412 103 0	2, 266 851 208 431 489 1, 746 548 86	1, 922 434 532 431 446 1, 703 545 86	1,631 203 559 371 528 1,389 545 85	494 90 440 370 344 1,631 543 82	689 90 451 426 273 794 543 77	739 371 480 270 2 526 213 68

¹ Includes domestic rye in store in public and private elevators in 41 markets and rye afloat in vessels or barges in harbors of lake and seaboard ports. Does not include rye in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of rye intended for local use.

² Includes United States rye in store at 15 Canadian points or afloat in vessels or barges in the harbors of lake and seaboard ports. Does not include rye in transit to Canadian ports.

³ Includes practically all Canadian rye held within Canadian boundaries, exclusive of farm and certain

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market

⁴ Includes Canadian rye in store and afloat at 10 United States lake and seaboard ports but not Canadian rye in transit on lakes or canals.

Data for domestic and Canadian rye in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States rye in Canada data are for stocks on the Friday nearest the 1st day of the month.

Table 39.—Rye: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	July 15	Aug.	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb.	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 92.3 80.7 91.2 99.2 85.3 43.6 33.0 22.0 78.2 61.8	Cents 92. 8 86. 1 80. 6 83. 6 91. 8 53. 0 32. 5 23. 3 58. 8 73. 9	Cents 81. 9 81. 6 81. 4 81. 8 89. 2 53. 1 33. 2 23. 6 61. 4 79. 1	Cents 74.1 82.4 81.0 87.1 89.9 47.6 33.6 22.3 52.7 75.0	Cents 73. 4 83. 0 84. 0 86. 3 85. 5 41. 6 41. 4 22. 1 55. 4 71. 9	Cents 86.8 82.4 87.8 87.2 88.4 41.1 36.8 21.1 51.9 74.4	Cents 88. 2 83. 6 88. 0 87. 9 85. 7 37. 4 36. 8 22. 7 53. 6	Cents 82. 5 88. 4 89. 5 91. 5 78. 3 34. 9 36. 3 21. 9 54. 2	Cents 73. 4 86. 4 96. 0 91. 5 68. 4 34. 3 37. 7 22. 8 53. 1	73. 8 85. 2	Cents 72. 5 90. 1 111. 5 79. 1 63. 8 33. 0 33. 4 38. 9 51. 9	Cents 76.0 94.9 106.8 75.7 60.7 31.4 28.8 43.5 58.2	Cents 79. 1 83. 0 83. 5 83. 6 85. 7 44. 0 33. 6 61. 8 1 74. 6

I Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop marketing season. Data for earlier years in 1923 Yearbook, table 43. Only monthly prices are comparable.

Table 40.—Rye, including flour in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

					Year b	eginnin	g Julj			
Country	1925-	rage -26 to 9-30	1930	-31	193	1-32	193:	2–33	1933-	-34 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Germany United States Union of Soviet Socialist Republics Poland Hungary Canada Argentina Rumania Bulgaria Yugoslavia Algeria Total	6, 597 6, 559 6, 328 4, 511 1, 133 486 176 50	13, 815 0 2, 453 1 129 0 12 0 6 3	4, 518 227 29, 084 15, 743 3, 319 1, 968 1, 610 2, 267 2, 444 2 64	1, 233 0 0 10 0 18 0 0 0 0	4, 393 909 43, 267 4, 889 2, 712 6, 689 9, 272 3, 034 1, 841 0 50	1,000 bushels 18,075 0 226 0 11 0 0 0	6, 385 311 9, 551 12, 985 3, 003 5, 132 5, 306 3 44 123 1 42	15, 808 0 386 0 6 0 0 0 0		1,000 bushels 4,964 111,949 0 411 0 0 0
PRINCIPAL IMPORTING COUNTRIES	03, 300	10, 419	61, 246	1, 201	77,050	18,812	12,000	16, 200	26, 919	17, 830
Denmark Norway Finland Czechoslovakia Austria Netherlands Latvia 4 Sweden Estonia Belgium France United Kingdom 4 Italy Switzerland	10 963 103 528 25 537 43	7,027	5 1, 737 86	13, 468 5, 216 3, 136 719 4, 592 11, 267 471 1, 131 515 6, 304 4, 286 345 1, 323 296	319 4 885 60 805 1 50 1,030 1 12 1	8, 230 6, 294 2, 081 9, 832 3, 185 7, 047 179 2, 188 42 4, 875 3, 333 377 336 177	312 1,024 77 172 1 52 720 1 9 1 0	10, 683 5, 046 2, 647 396 1, 129 8, 629 0 739 0 4, 936 1, 068 180 555 615	269 0 626 70 40 37 91 1 14 0	11, 006 5, 663 2, 316 48 404 9, 726 61 0 9, 055 219 268 237
Total	2, 761	47, 988	3,999	53, 069	3, 170	48, 176	2, 370	36, 623	1,148	39, 003

¹ Preliminary.

Bureau of Agricultural Economics, official sources except where otherwise noted.

From the Agricultural Statistics, International Institute of Agriculture.
 Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.
 Year beginning Aug. 1; International Yearbook of Agricultural Statistics.
 Calendar year.

Table 41.—Rye No. 2: Weighted average price per bushel of reported cash sales, Minneapolis, 1925-26 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Weight- ed aver- age
1925-26. 1926-27. 1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	Cents 95 102 104 111 107 55 37 32 83 74	Cents 100 97 92 94 98 60 38 34 72 89	Cents 83 93 92 94 97 55 39 34 71 87	Cents 77 95 92 94 97 49 41 32 62 76	Cents 81 94 99 98 95 43 51 31 62 76	Cents 98 94 102 97 98 44 45 31 60 80	Cents 99 99 103 101 91 38 46 33 64	Cents 91 102 106 105 78 37 46 32 61	Cents 81 99 114 100 66 36 47 35 59	Cents 85 99 124 89 68 35 45 43 57	Cents 83 109 128 85 65 36 39 52 60	Cents 89 111 123 84 57 37 32 62 69	Cents 88 98 104 95 90 51 42 41 69

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minueapolis Daily Market Record.

Chicago prices, 1909-10 to 1926-27 appear in 1927 Yearbook, table 46. Minneapolis prices, 1909-10 to 1924-25, appear in 1930 Yearbook, table 43.

Table 42.—Corn: Acreage, production, value, and foreign trade, United States, 1866-1934

			Produ	ıction	Price per		Price per	Foreign yea	ı trade ir begii	includii nning Ju	ng meal ly 3
Year	Acreage har- vested	Aver- age yield per	In grain equiva-	Har-	bushel re- ceived by pro-	Farm value, basis Dec. 1	bushel at Chi- cago, year be-	Domes-		Net ex	ports 4
	yesteu	acre	lent on entire acreage	vested as grain	ducers Dec.		ginning Novem- ber ²	tic ex- ports	Im- ports	Total	Per- centage of pro- duction
									1,000		
	1,000 acres	Bush-	1,000 bushels	1,000 bushels	Cents	1,000 dollars	Cents	1,000 bushels	bush- els	1,000 bushels	7
1866	30, 017		730 814	1	1	1	80	16, 027	82	15, 954	Percent 2, 2
1867	32, 116	24.7	793, 905				88	12, 494	50	12, 446	1.6
1868	35, 116	26. 2	919, 590				67	8, 287	91	8, 198	.9
1869			760,945		}						
1869		21. 8 29. 3	1 194 775				75 51	2, 140 10, 674		2, 051 10, 562	
1871	42,002	27. 2	1, 141, 715				40		59	35, 668	
1872	43.584	29.4	1. 279. 369	1		i	35		63	40, 091	3.1
1873	44, 084	22.9	1.008.326		1		60	35, 986	76	35, 910	3.6
1874 1875	47, 640	22. 2 27. 7	1,058,778		!		68		39	29, 986	2.8
1876	52, 446 55, 277	26.7	1, 200, 270				46 45		53 33	50, 858 72, 620	
1877	58, 799	25.8							15	87, 178	5.8
1878	59, 659	26. 2 28. 1	1, 564, 537	,			31		37	87. 848	
1879		28.1	1,754,592								
1879 1880	62, 229 62, 545	28. 2 27. 3	1,751,984				38			99, 507	
1881	63, 026	19.8	1,700,073				46 67	93, 648 44, 341		93, 572 44, 266	5.5
1882	66. 157	26.5	1,755, 272				55			41, 617	9 4
1883	68, 168	24. 2 28. 3	1,652,148				54	42, 259	6	46, 253	2.8
1884	68, 834	28.3	1, 947, 838				43	52, 876	5	52, 872	2.7
1885	71, 854	28. 6 24. 1	2, 057, 807				38		20		3.1
1886 1887	73, 911 73, 296	24. 1 21. 9	1, 782, 767				38		31	41, 337	2.3
1888	77. 474	29 1	2, 250, 632				35	70, 842	38	25, 323 70, 839	
1889	72,088	29.4 29.5	2, 122, 328					10,012		10,000	3. 1
1889	77, 656	29.5	2, 294, 289				36	103, 419	2	103, 417	4.5
1890		22.1	1,650,446			·	58		2	32, 039	1.9
1891 1892	78, 855 76, 914	29. 6 24. 7	2, 335, 804			,	47		16 2	76, 596	3. 3
1893	79, 832	23.8	1,900,401			!	41			47, 120 66, 487	
1894	80,069	20. 2 28. 0	1, 615, 016				44			28, 569	
1895	90, 479	28.0	2, 534, 762				26	101, 100	5	101, 096	4.0
1896		30.0	2,671,048				25	178, 817	7	178, 811	6.7
1897		25. 4 26. 8	2, 287, 628				30		4	212, 052	9.3
1899	91. 914	28.7	2, 686, 301				34	177, 255	4	177, 252	7.5
1899	94 591	28. 0	2, 666, 324 2, 645, 796 2, 661, 978 1, 715, 752				36	213, 123	3	213, 121	8.1
1900		28.1	2, 661, 978				43	181, 405	5	181, 400	
1901		18. 2	1,715,752				62	28, 029	19	28, 011	1.6
See foots	ootee at e	and of t	ahla								

See footnotes at end of table.

Table 42.—Corn: Acreage, production, value, and foreign trade, United States, 1866-1934—Continued

			Produ	iction	Price per		Price per	Foreign yes	ı trade ır begii	includir ming Ju	ig meal ly ³
Year	Acreage har-	yield	In grain		bushel re- ceived	value, basis	bushel at Chi- cago.			Net ex	ports 4
	vested	per acre	equiva- lent on entire acreage	Har- vested as grain	ducers Dec.		year be- ginning Novem- ber ²	Domes- tic ex- ports	Im- ports	Total	Per- centage of pro- duction
									1.000		
	1,000	Bush-	1,000	1,000		1,000		1,000	bush-	1.000	
1000	acres	els 28. 5	bushels	bushels	Cents	dollars	Cents	bushels	els 41	bushels 76, 598	Percent 2.8
1902 1903	97, 177 93, 555	28.5 26.9	2, 110, 904				47	76, 639 58, 222			
1904	95, 228	28. 2	2, 686, 624				48	90, 293			
1905	95, 746	30.9	2, 954, 148				44	119, 894	11		4.1
1906	95, 624	31.7	3, 032, 910				50		11	86, 358	2.8
1907	96,094	27. 2 26. 9	2, 613, 797				68				
1903	95, 285	26. 9	2, 566, 742				65	37, 665	258	37, 437	1.5
1909		25.9	2,552,190						==		
1909		26. 1 27. 9	2, 611, 157				59			38, 010 65, 562	1. 5 2. 3
1910	102, 267	27. 9 24. 4	2.002.79±				0.0		53 54		
1912		29. 1	2,414,000				53	59, 780		49, 913	
1913	100, 206	22.7	2, 272, 540				70		12,368		
1914	97.796	25.8	9 599 750				70	50, 668	9, 899	40, 816	
1915	100, 623	28.1	2,829,044				79	30, 897		34, 761	
1916	100, 561	24. 1	2, 425, 206				111			65, 092	
1917	110, 893	26. 2	2, 908, 242				163	49, 073	3, 197	45, 950	1.6
1918		23. 9 26. 7	2, 441, 249	A 2/5 003			162	23, 019	3, 346	19, 684	.8
1919 6 1919	87,772 98, 145	27.3		2, 345, 833 2, 341, 870	150.7	4, 035, 445	159	16,729	10 000	R, 509	.2
1920	101, 359	30.3	3, 070, 604	2, 695, 085	61.0	1, 872, 085	62		5 791	66, 116	
1921	103, 155	28. 4	2 928 442	2, 556, 924	52.7	1, 544, 722	55		142		6.1
1922	100, 345	27. 0	2, 707, 306	2, 229, 496	75. 2	2, 036, 831	73	96, 595		96, 415	3.6
1923	101, 123	28.4	2, 875, 292	2, 429, 551	83, 5	2, 400, 513	88				. 8
19246		22.2		1,823,880							
1924	100, 420	22.9	2, 298, 071	1, 899, 751	105.3	2, 420, 928	106	9, 791	4, 618	5, 348	. 2
1925	101, 331	28. 2	2, 853, 083	2, 413, 364	69.9	1, 995, 031	75	24, 783	637	24, 150	.8
1926		25. 9	2, 574, 511	2, 133, 401	75.3 84.9		87	19, 819 19, 409		18, 731 11, 364	
1927 1928	98, 357 100, 336	27. 2 27. 1	2, 677, 671 2, 714, 535	2, 249, 926	84.3	2, 218, 399	101 92		5, 463 490		1.5
1929 6	83, 162	25. €	2, (14, 000	2, 282, 938 2, 180, 75?	04.0	4, 400, 011	92	41,014	230	21,001	4, 3
1929	97, 806	25. 9	2, 535, 546	2, 140, 215	79.8	2, 024, 132	83	10, 281	497	9, 788	. 4
1930	101, 083	20. 4		2, 140, 215 1, 733, 429	59. 4	1, 227, 659	60	3, 317	1,747	1,572	.1
1931	105, 948	24. 4	2, 588, 500	2, 229, 088	32.1	830, 725	36	3, 969	386	3, 583	1 .1
1932	108,668	26. 8	2, 906, 873		31.8		35			8, 580	
1933	103, 260	22.8	2, 351, 658	2, 038, 706	52.2	1, 227, 221	52	4, 965	244	4, 721	. 2
1934 7	87, 486	15.8	1, 380, 718	1, 107, 887	84.7	1, 163, 961					
						<u> </u>	1		1		

exports minus imports for consumption. (See introductory text.)

5 Net imports, i. e., total imports minus total exports (domestic plus foreign).

6 Corn harvested for grain; total acreage of corn in 1924 is 98,401,627 acres; 1929, 97,740,740 acres.

7 Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italia figures are census returns.

¹ Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop-marketing season.

¹ Prices 1866-67 to 1898-99 are averages of the weekly quotations for No. 2 or better in annual reports of Chicago Board of Trade; subsequent prices are compiled from the Chicago Daily Trade Bulletin, average of daily prices weighted by car-lot sales, No.3 yellow.

¹ Compled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, June issues 1919-26; January and June issues, 1927-34 and official records of the Bureau of Foreign and Domestic Commerce. Corn—General imports 1866-1993 and 1912-33; imports for consumption 1910 and 1911, and 1934. Corn meal—Imports for consumption, 1866-1934. Corn meal converted to terms of grain on the basis of 4 bushels of corn to a barrel of meal.

¹ Total exports (domestic plus foreign) minus total imports. Beginning 1933-34 net exports are domestic exports minus imports for consumption. (See introductory text.)

Table 43.—Corn: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

1927-31	Teceroea og	prou		·								
Average 1933 1934 Average 1935 1934 Average 1937-31 1934 1933 1934 1936 1937-31 1938 1934 1934 1938 1934 1938 1934 1938 1934 1938 1934 1934 1938 1934 1934 1938 1934 1934 1934 1934 1938 1934 1934 1934 1934		Acrea	ge harv	ested.	Yiel	d per s	ere	F	roduction	1		
Maine	State and division		1933	1934 1	age,	1933	1934 1		1933	1934 1	1933	1934 1
Ohio. 3, 489 3, 364 2, 927 36.2 33.5 31.5 121, 397 112, 694 92, 200 50 79 Indiana. 4, 476 4, 314 3, 796 34.5 29.5 24.8 146, 379 127, 283 94, 141 47 80 Michigan. 1, 277 1, 366 1, 392 29.6 31.0 24.0 34, 913 24, 215 33, 408 55 83 Michigan. 1, 277 1, 365 1, 392 29.6 31.0 24.0 34, 913 24, 215 33, 408 55 85 Missouri. 4, 661 4, 644 4, 507 31.0 29.5 17.0 134, 848 142, 957 76, 619 44 83 Morth Dakota 1, 1, 229 1, 377 8, 703 38.0 40.0 23.0 41, 14 26, 482 45 100 83 Morth Dakota 1, 1, 281 1, 377 3, 873 2, 827 21.3 10.6 4, 59, 44 43 10.3 <td>New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania</td> <td>acres 13 13 62 41 9 51 567 172 1,232</td> <td>acres 17 15 63 38 10 53 571 167 1, 280</td> <td>acres 16 15 67 37 10 52 617 166 1, 216</td> <td>els 39, 4 42, 5 40, 7 42, 5 40, 3 34, 1 40, 4</td> <td>els 41. 0 40. 0 40. 0 41. 0 39. 0 31. 0 37. 0 39. 5</td> <td>els 41. 0 42. 0 41. 0 41. 0 41. 0 34. 5 43. 0</td> <td>bushels 538 562 2, 617 1, 686 346 2, 042 19, 072 6, 581 45, 570</td> <td>bushels 697 600 2, 520 1, 520 410 2, 067 17, 701 6, 179 50, 560</td> <td>bushels 656 615 2, 814 1, 517 410 2, 132 21, 286 7, 138 52, 896</td> <td>69 77 65 80 88 78 65 66 62</td> <td>104 103 92 93 93 91 87 84</td>	New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	acres 13 13 62 41 9 51 567 172 1,232	acres 17 15 63 38 10 53 571 167 1, 280	acres 16 15 67 37 10 52 617 166 1, 216	els 39, 4 42, 5 40, 7 42, 5 40, 3 34, 1 40, 4	els 41. 0 40. 0 40. 0 41. 0 39. 0 31. 0 37. 0 39. 5	els 41. 0 42. 0 41. 0 41. 0 41. 0 34. 5 43. 0	bushels 538 562 2, 617 1, 686 346 2, 042 19, 072 6, 581 45, 570	bushels 697 600 2, 520 1, 520 410 2, 067 17, 701 6, 179 50, 560	bushels 656 615 2, 814 1, 517 410 2, 132 21, 286 7, 138 52, 896	69 77 65 80 88 78 65 66 62	104 103 92 93 93 91 87 84
Towa					38. 5	37. 2	40.7	79, 014				87. 2
Delaware	Missouri North Dakota South Dakota Nebraska	6,088 1,028 4,977 9,506	11, 375 6, 019 1, 334 3, 873 10, 431	8, 760 4, 815 1, 401 2, 827	34. 5 35. 2 29. 6 32. 8 31. 0 38. 0 26. 6 21. 5	29. 5 27. 0 31. 0 35. 0 29. 5 40. 0 23. 5 15. 0 10. 6 22. 5	24.8 20.5 24.0 31.0 17.0 23.0 5.5 4.5	302, 578 34, 013 64, 895 134, 848 413, 751 150, 699 20, 200 95, 748	455, 000 141, 446 20, 010 41, 054	201, 480 26, 482 4, 904 12, 722 21, 363	50 45 43 47 41	80 83 85 80 83 85 100 93 96 97
Western	North Central	64, 196	64, 467	50, 421	30.0	26. 4	15.8	1, 852, 208	1, 700, 596	794, 559	47. 4	84. 0
Kentucky. 2,900 2,727 2,618 23,2 25,0 24,0 63,954 68,175 62,832 58 79 Tennessee. 2,854 2,810 2,641 21,2 23,5 22,3 58,880 66,035 58,894 60 79 Alabama. 2,770 3,031 3,425 13,1 12,2 14,6 35,799 36,978 47,950 78 82 Mississippi. 2,068 2,390 2,748 15,0 11,0 14,6 31,919 35,850 40,121 72 24 Arkansas 1,907 2,013 2,053 16,31 13,5 7.5 30,424 27,176 16,388 66 96 Louisiana. 1,200 1,198 1,354 14,6 17,0 12,0 18,00 15,574 16,244 55 96 Texas. 4,683 5,422 5,007 16.7 13.8 9.0 81,615 74,824 45,873 62 93 <	North Carolina South Carolina Georgia	2, 139 1, 490 3, 512	560 1, 571 464 2, 392 1, 573 3, 740	515 1, 461 441 2, 440 1, 730 3, 927	31. 6 22. 9 26. 4 18. 6 14. 0	29. 0 23. 5 30. 0 18. 5 14. 5 10. 5	33. 0 24. 5 27. 5 19. 5 12. 0 10. 0	15, 187 33, 611 11, 290 40, 713 21, 215 37, 678	16, 240 36, 918 13, 920 44, 252 22, 808 39, 270	16, 995 35, 794 12, 128 47, 580 20, 760 39, 270	61 68 69 73 75	84 85 86 87 93 84
South Central 21, 544 22, 452 22, 053 17. 4 15. 4 13. 6 374, 463 346, 070 298, 960 63. 7 84. 4 Montana 134 215 133 14. 6 11. 5 5. 0 1, 933 2, 472 665 57 98 Idaho 39 50 38 37. 3 39. 0 40. 0 1, 478 1, 950 1, 520 57 91 Wyoming 176 226 131 15. 6 11. 0 5. 0 2, 633 2, 486 655 41 109 Colorado 1, 614 2,004 842 14. 0 11. 0 4. 0 24, 119 22, 044 3, 368 40 102 New Mexico 244 238 136 14. 2 14. 0 8. 0 3, 747 3, 332 1, 088 57 110 Arizona 33 41 35 16. 7 18. 0 15. 0 17 78. 0 400 75 109			11, 118	11, 294	16. 5	16. 4	16.3	169, 848	182, 417	183, 781	70. 1	85. 8
South Central 21, 544 22, 452 22, 053 17. 4 15. 4 13. 6 374, 463 346, 070 298, 960 63. 7 84. 4 Montana 134 215 133 14. 6 11. 5 5. 0 1, 933 2, 472 665 57 98 Idaho 39 50 38 37. 3 39. 0 40. 0 1, 478 1, 950 1, 520 57 91 Wyoming 176 226 131 15. 6 11. 0 5. 0 2, 633 2, 486 655 41 109 Colorado 1, 614 2,004 842 14. 0 11. 0 4. 0 24, 119 22, 044 3, 368 40 102 New Mexico 244 238 136 14. 2 14. 0 8. 0 3, 747 3, 332 1, 088 57 110 Arizona 33 41 35 16. 7 18. 0 15. 0 17 78. 0 400 75 109	Kentucky Tennessee Alabama Mississippi Arkansas Louislana Oklahoma Texas	2, 900 2, 854 2, 770 2, 068 1, 907 1, 200 3, 162 4, 683	2, 390 2, 013 1, 198 2, 861	2, 748 2, 053 1, 354 2, 117	15. 0 16. 3 14. 8 16. 4	23. 5 12. 2 15. 0 13. 5 13. 0	22. 3 14. 6 14. 6 7. 5 12. 0	58, 880 35, 799 31, 919 30, 424 18, 030 53, 843	66, 035 36, 978 35, 850 27, 176 15, 574 21, 458	40, 121 15, 398 16, 248 11, 644	72 66 67 55	82 84 96 89 96
Adalo			22, 452	22, 053	17.4	15. 4	13. 6	374, 463	346, 070	298, 960	63. 7	84. 4
	Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	39 176 1, 614 244 33 15 2 33 62 83	50 226 2,004 238 41 21 2 41 71 100	38 131 842 136 35 19 2 34 57 95	37. 3 15. 6 14. 0 14. 2 16. 7 25. 6 23. 7 35. 9 32. 0	39. 0 11. 0 11. 0 14. 0 18. 0 23. 0 22. 0 38. 0 34. 0 28. 0	40.00 5.00 4.00 8.00 14.00 20.00 33.00 32.5	1, 478 2, 633 24, 119 3, 747 571 407 48 1, 233 2, 046 2, 557	1, 950 2, 486 22, 044 3, 332 738 483 41, 558 2, 414 2, 800	1, 520 655 3, 368 1, 088 490 304 40 1, 122	57 41 40 57 75 72 73 58 68	91 109 102 110 109 102 109 83 82 106
United States 100, 706 103, 260 87, 486 25. 7 22. 8 15. 8 2, 516, 307 2, 351, 658 1, 380, 718 52. 2 84.					16. 3			40, 773	40, 321	13, 954	48. 4	98. 5
	United States	100, 706	103, 260	87, 486	25. 7	22, 8	15.8	2, 516, 307	2, 351, 658	1, 380, 718	52. 2	84. 7

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 44.—Corn: Utilization for grain, silage, hogging down, grazing, and forage, by States, 1933 and 1934

			1933					1934 :		
State and division	For	grain	For s	ilage	Hog- ging	For	grain	For si	lage	Hog-
	Acre- age	Produc- tion	Acre- age	Pro- due- tion	down, grazing, and forage acreage	Acre- age	Produc- tion	Acre- age	Pro- duc- tion	down, grazing, and forage acreage
Maine	1,000 acres	1,000 bushels 123	1,000 acres 10	1,000 short tons 105	1,000 acres 4	1,000 acres	1,000 bushels 82	1,000 acres 10	1,000 short tons 100	1,000 acres
Maine New Hampshire Vermont Massachusetts	3	120	10	115	2	3	123	10	107	1 1
Vermont	8 9	320 360	46 21	506 231	9	7 9	294 369	50	525 220	1
Rhode Island	1	41	6	60	8	1	41	20 7	70	1 :
Connecticut New York		546	33	363	6	13	533	32 377	352	1
New York	124	3, 844	357	3, 213	90		3, 898	377	3, 582	12
New Jersey Pennsylvania	130 967	4, 810 38, 196	30 250	264 2, 250	7 63	131 920	5, 633 40, 020	28 231	280 2, 310	6
North Atlantic	1, 259	48, 360	763	7, 107	192	1, 199	50, 993	765	7, 546	
Ohio	3,048	103, 632 117, 882	111 115	755 748	205 203	2,631	84, 192 89, 734	103 110	824 682	
Indiana Illinois Michigan Wisconsin Minnesota	3, 996 7, 700	เวกรเกก	250	1, 375	374	3, 519 6, 207	133, 450		1, 786	
Michigan	886	28, 352 33, 372 96, 170	187	1, 402	292	802	20, 852	250	1, 625	34
Wisconsin	927	33, 372	1,083	8, 231	218	680	22, 440	1,198	8,386	50
Minnesota	3, 260 10, 261	410, 440	480 274	3,600 2,466	1, 106 840	2, 119 5, 910	46, 618 159, 570	816 570	3, 672 3, 135	1, 57
Iowa Missouri North Dakota South Dakota	5, 417	130,008	60	360	549	1 1 444	11, 552	241	651	2, 28 3, 13
North Dakota	133	2, 128	148	370	1,053	28	210	1961	196	1.17
South Dakota	2, 203 9, 866	31,944	189	378 428	1, 481 470	1 441	4, 983	142 734	199 1, 101	2, 24 4, 27
Nebraska Kansas	5, 548		95 454	1, 589	992	1,008	10, 014 756	869	1, 564	
North Central			3, 446	21, 702	7,776		584, 371	5, 601	23, 821	19, 18
	<u> </u>						4.000			
Delaware	140 525	3,500	3 26	260 260	9	136 478		28	28 266	
Virginia	1, 501		46	460	24	1, 381	33, 834	60	510	11 5
West Virginia	428	13, 268	26	221	10	1 398	11, 144	25	250	Ī
North Carolina	2, 300 1, 537	42, 550 22, 286	12	66		2, 366 1, 707	46, 137 20, 484	14	77	
Georgia	3, 619	38,000	3 6	27	115	3, 801	38, 010	3 6 2	2	1 1
Deisware Maryland Virginia. West Virginia. North Carolina South Carolina Georgia Florida	646	5, 168	. 2	8		613	6, 130	2	8	2
South Atlantic				1, 081	298	10, 880			1, 171	-
Kentucky Tennessee	2, 624 2, 745 3, 009	65, 600	16	120		2, 475	59, 400 57, 556 47, 600	17	119	15
Alabama	2,74	64, 508 36, 710	14			ארו פי ומ	57,556	12	78	
Mississippi	2, 356	35, 340	2	10	1 32	2, 708	39, 537	3	14	
Arkansas	1, 929	N 96 049	2 2		82	1,845	14, 784	1 2	(3 2
Alabama Mississippi Arkansas Louisiana Oklahoma	1, 181	15, 353 18, 253	14	42			15, 984	13	3	2 4
Texas	1, 181 2, 434 5, 251	72, 464	8	22	163	4, 385	43, 820	ii	2	
South Central			62	310	861	20, 407	288, 767	65	29	1,58
Montana	34			10		10		2		
Idaho Wyoming Colerado New Mexico	33	1, 287 1, 080	9	70	132	18	720 281	8	6	
Colorado	1, 783	20, 504	คลี	320	157	1 337	2,022	90		5 4
New Mexico	186	3 2,604	l) 3	2	49	10:	918	3) 3	1:	2
Arizona	29			32		2		3 9	1. 5	
Nevada	10		5 1	40					9	7
Washington	16	608	31 9	80	16	1	49	8	8	11
Arizona Utah Nevada Washington Oregon California	. 3	5 1,190	21	130) 1	5 2	84	5 18	10	8
						 	<u> </u>			-
Western	2, 270							-	77	
United States	.1 88, 999	9 2, 038, 700	6 4.541	31, 11	9,720	0 58,75	1, 107, 887	7 6.745	33, 60	3 21,9

¹ Preliminary.

Bureau of Agricultural Economies; estimates of the Crop Reporting Board.

Table 45.—Corn: Acreage, yield per acre, and production in specified countries, average 1921–22 to 1925–26, annual 1931–32 to 1934–35

		.													
			Acroago				Ŕ	Yield per acre	cre				Production		
Country	A verage 1921–22 to 1926–26	1931-32	1932-33	1933-34	1934-361	Average 1921–22 to 1925–26	1931–32	1932-33	1933-34	1934-351	Average 1921–22 to 1925–26	1931-32	1932-33	1934-33	1934-351
North America: Osmada: United States. Merico. Gustemals.	1,000 acres 293 101, 276 7, 519 390	1,000 acres 1132 105,948 8,346 8,346	1,000 acres 130 108, 668 8,013 363	1,000 acres 1137 103, 260 7, 903	1,000 acres 161 87,486 7,298	Bushels 27.0 11.3 19.9	Bushels 41. 3 24. 4 10, 1 14. 4	Bushels 38.9 26.8 9.7 15.3	Bushels 36.9 22.8 9.6	22. 8 15. 8 9. 2 9. 6	1,000 bushels 12,074 2,732,439 84,882 7,772	1,000 bushels 6,440 2,588,509 84,196 5,216	1,000 bushels 5,067 2,906,873 77,691 5,663	1,000 bushels 5,054 2,351,658 75,738	1,000 bushels 6,589 1,380,718 66,978
Total North American countries reporting area and production, all years. Estimated North American total	109, 087 110, 200	114, 428 116, 000	116, 811 118, 400	111, 300 112, 800	94, 945 96, 500	25.9	23.4	25.6	21.9	15.3	2, 830, 295 2, 849, 000	2, 678, 153 2, 704, 000	2, 989, 621 3, 015, 000	2, 432, 450 2, 460, 000	1, 464, 285 1, 482, 000
Emopa: France. Spain. Portugal. Italy. Austria. Cachoslovakia. Hungay. Yugoslayia. Greece. Bulkaria. Rumania. Poland. U. S. R., European and Astatio	1, 1830 3, 792 3, 792 3, 792 4, 4, 4, 738 8, 739 5, 238	1, 053 1, 053 3, 450 1, 053 1, 053 2, 720 5, 901 11, 748 11, 748 9, 941	840 1, 102 3, 579 1, 579 2, 905 6, 228 6, 528 11, 802 11, 802 9, 096	832 1,067 3,536 1,536 2,816 6,518 6,518 1,796 11,928 11,928 9,777	822 3, 665 160 2, 765 6, 548 1, 658 12, 368	7,23,1 7,23,23,23,23,2 7,24,23,2 8,24,2 1,24	28.8 22.22 22.22 22.02 20.1 20.1 20.3 18.9	24.42.13.33.23.23.23.23.23.23.23.23.23.23.23.23	20.6 20.6 20.6 20.6 20.6 20.6 20.6 20.6	24. 9 34. 4 36. 9 27. 1 28. 8 30. 0 28. 8 16. 1 15. 3	14, 754 25, 933 11, 765 94, 793 3, 690 108, 398 108, 398 108, 398 111, 550 111, 550	24, 622 26, 388 17, 563 17, 563 76, 618 76, 618 89, 748 126, 111 126, 111 28, 708 238, 709 4, 699 186, 607	16, 115 27, 286 14, 485 118, 718 12, 288 12, 176 18, 689 18, 6	17, 122 25, 997 12, 283 101, 986 5, 378 6, 018 11, 239 140, 863 10, 760 87, 440 179, 288 179, 288 179, 288	20, 440 125, 692 15, 897 18, 736 18, 736 18, 969 188, 969
Total Buropean countries reporting area and production, all years Bettmated European total, excluding U. S. S. R.	25, 200	27, 473	28, 345 30, 900	28, 546 30, 800	28, 911 31, 200	19.9	21.1	25.3	20.0	23.0	459, 472	632, 000	715,880	570, 094 613, 000	663, 935
Artios: Kanya. Morcoco. Egypt. Estimated African total	106 1,988 3,100	161 864 2, 194 5, 200	164 866 2,043 6,200	113 887 1, 638 4, 600	1, 013 1, 629 4, 700	23. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	16.9 6.2 35.6	24.8 5.5 87.2	23. 6 6. 2 35. 5	28.9 8.0 37.5	2, 507 3, 629 69, 096 84, 000	2, 724 5, 363 78, 201 110, 000	4, 070 4, 677 76, 053 107, 000	2, 667 5, 528 58, 101 88, 000	3, 554 8, 149 61, 020 94, 000
					-										

12, 692 13 63, 382 26	266,000	2, 203, 635 0 2, 552, 000	177, 388 2, 911 3, 220 2, 612 4, 186 2, 911 3, 220 2, 612 4, 186 2, 911 2, 730 2, 771 24, 009 2, 771 24, 009 2, 771 24, 009 2, 771 24, 009 2, 771 24, 009 2, 4, 186 2, 24, 009 2, 4, 18 2, 24, 24 2, 18 2, 24
22, 324 85, 760 69, 243 8, 525	215,000	3, 091, 104 3, 376, 000	2, 052 24, 186 24, 049 16, 218 16, 236 81, 467 884, 407 669, 000 4, 046, 000 4, 046, 000
16, 810 90, 520 16, 326 60, 699 2, 186 3, 431 6, 715	207,000	3, 367, 336 3, 807, 111 3, 091, 104 3, 657, 000 4, 094, 000 3, 376, 000	3, 256 6, 340 26, 741 31, 357 8, 432 74, 886 6, 006 373, 594 64, 701, 836 4, 701, 836
21, 904 96, 040 13, 565 66, 969 3, 417 5, 184	221,000	3, 367, 336 3, 667, 000	177, 388 2,961 6,340 2,971 1,406 6,340 2,971 1,406 6,340 2,971 1,340 1,3
20, 606 82, 482 16, 561 460, 014 2, 829 2, 771	192, 000	3, 385, 605 3, 625, 000	177, 338 1, 406 4, 919 227, 303 4, 720 16, 170 8, 641 8, 641 8, 641 870, 000 670, 000 671, 000 872, 473 872, 473 873, r>873, 473 873 873 873 873 873 873 873 873 873 8
16.3		17.3	
23.7 13.7 25.4 12.8		21.6	22, 88, 26, 28, 38, 38, 38, 38, 38, 38, 38, 38, 38, 3
20.3 13.1 11.4 25.1 12.7 23.0		25.6	19,8 12,2 16,3 16,3 17,7 17,7 17,7
24.3 10.5 27.4 10.7 11.1 11.1 11.1 11.1 11.1 11.1 11.1		23.1	22.0 11.9 31.4 9.1 28.8 20.8 20.8
3 10.2 12.0 12.0 12.0 25.0 17.1		26.0	28.28.29.29.29.29.29.29.29.29.29.29.29.29.29.
822	12, 200	127, 399 144, 600	
0,267 2,723 276	12, 400	143, 426 160, 600	1184 118 1184 118 1508 18, 721 16, 074 16, 506 228 4, 946 15, 449 22, 302 21, 070 22, 302 33, 700 35, 000 190, 146 186, 063
830 1, 892 1, 426 2, 422 111 270 249	12,800	149, 049 167, 300	104 618 6,373 6,074 2,283 4,546 22,607 33,700 33,700 190,146
2, 296 1, 296 2, 441 2, 441 2, 441 2, 441 2, 441 2, 441 2, 441	12,900	146, 021	134 164 488 6,109 6,026 6,074 288 4,046 288 4,046 21,009 21,076 33,800 33,700 188,032 190,146
1866 6,570 1,338 12,132 141 231 162	11, 500	135, 534 150, 000	6, 980 470 8, 003 4, 466 223 4, 088 326 17, 089 20, 100
Asia: Turkey Turkey Turkey Turlia Tur	Estimated Asiatic total	Total Northern Hemisphere countries reporting area and production, all years. Estimated Northern Hemisphere total, excluding U, S. S. R.	Brail Drugusy Trugusy Argentina Argentina Argentina Bouthar Rhodesia Ruopean Native Southern Rhodesia Australia Total Southern Hemisphere countities reporting area and producting area and producting area and bouthern all years Estimated Southern Hemisphere foral Total Northern and Southern Hemisphere in all years Estimated Southern Hemisphere in all years Total Northern and Southern Hemisphere in a specific area in the second and southern Hemisphere in the second in the se

1 Preliminary.
12-year paverage.
1 year only.
48-year average.
4 Buropean cultivation only.

Bureau of Agricultural Economics. Official sources and International Institute of Agriculture. ""U. S. S. R." means Union of Soviet Socialist Ropublics.
Both average and provided my the year of larvests. The reveits of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1833-34 the crop harvested in the Northern Hemisphere in 1833 is combined with the Southern Hemisphere harvest which takes place early in 1834.

Table 46.—Corn: Production, world and selected countries, 1900-1901 to 1934-35

	Esti- mated	Esti- mated			Selec	ted coun	tries		
Crop year	world, exclud- ing Russia	Europe, exclud- ing Russia	United States	Argen- tina	Ruma- nia	Yugo- slavia	Italy	Brazil	Russia ¹
1900-1901 1901-2 1902-3 1903-4 1904-5 1905-6 1906-7 1907-8 1908-9 1909-10 1910-11 1911-12 1911-13 1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1933-34 1934-35 6	3, 517 4, 105 4, 551 4, 172 4, 044 4, 347 3, 886 4, 525 4, 358 4, 255 4, 244 4, 357 3, 954 4, 740	Million bushels 497 391 459 497 498 553 441 485 552 552 552 559 5520 389 5520 5547 576 559 653 455 665 665 665 661 710	Million bushels 2, 6626 1,7774 2, 6857 2, 6858 2, 6758 2, 6858 2, 4758 2, 2738	Million bushels 99 4 149 175 141 1995 177 175 263 321 259 230 176 224 259 230 176 227 186 322 281 420 299 288 246	Million bushels \$157 688 800 200 599 1311 588 790 700 1004 1115 1003 866 599 139 139 1555 1664 2300 1399 1099 2551 1758 2399 2366 1779 189	Million bushels 18 19 9 18 18 19 9 21 22 27 27 27 27 27 27 27 28 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Million bushels 88 100 171 89 90 97 97 93 88 96 102 104 95 101 111 102 82 83 77 89 90 108 110 118 87 65 100 118 87 67 119 102 126	Million bushels	bushels 34 68 49 51

¹ Includes all Russian territory reporting for the years shown.

² Total Russian Empire, exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

⁸ Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and the Provinces of Batum and Elizabetpol in Transcaucasia.

Bureau of Agricultural Economics. Official sources and International Institute of Agriculture. Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus for 1933-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere harvest which takes place early in 1934.

Table 47.—Corn: Stocks on farms, quarterly, United States, 1926-35

		Stocks or	farms		77	Stocks on farms					
Year	Jan. 1	Apr. 1	July 1	Oct. 1 1	Year	Jan. 1	Apr. 1	July 1	Oct. 11		
1926 1927 1928 1929 1930	1,000 bushels 1,459,153 1,446,780 1,435,316 1,389,764	1,000 bushels 980, 489 870, 624 715, 281 780, 896 750, 223	1,000 bushels 535, 978 444, 058 291, 791 396, 267 349, 481	1,000 bushels 262,910 191,679 87,531 146,719 131,845	1931 1932 1933 1934 1935	1,000 bushels 1, 118, 424 1, 556, 349 1, 813, 479 1, 433, 740 814, 017	1,000 busheis 625,086 913,666 1,128,122 841,498 438,180	1,000 bushels 312,389 527,374 630,849 474,370	1,000 bushels 160, 460 250, 978 317, 863 266, 740		

I Includes old crop only.

6 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

⁴ Beginning this year, estimates within present boundaries of the Union of Soviet Socialist Republics, exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924-25 produced 26,048,000 bushels Production in present boundaries beginning this year, therefore not comparable with earlier years.

Table 48.—Corn: Monthly marketings by farmers, as reported by about 3,500 mills and elevators. United States, 1924-25 to 1933-34

		Percentage of receipts during—												
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Year	
1924-25 1925-26 1926-27 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33	Per- cent 7.0 5.9 10.1 6.2 6.6 6.9 7.7 7.6 8.3 8.8	Per- cent 11. 1 9. 3 9. 1 8. 6 12. 5 9. 3 10. 5 9. 9 8. 1 10. 9	Per- cent 13.0 14.6 12.9 15.5 16.7 13.4 14.0 11.2 8.9 9.6	Per- cent 13.6 12.1 11.7 13.8 12.9 10.9 11.0 10.2 8.0 8.0	Per- cent 9.5 10.4 10.8 11.7 11.5 10.6 10.2 10.4 7.4 6.5	Per- cent 8.1 8.5 6.9 7.4 7.4 8.2 7.6 5.1 6.7	Per- cent 6.3 5.3 4.8 5.4 3.8 7.1 7.0 7.4 8.4 3.6	Per- cent 7.8 7.1 6.1 6.2 4.3 6.9 5.8 6.4 9.1	Per- cent 4.3 8.2 9.1 5.3 6.5 5.4 10.3 6.4	Per- cent 6. 6 5. 1 5. 7 5. 1 6. 6 6. 5 6. 2 12. 4 10. 8	Per- cent 6.2 7.6 6.2 5.8 7.0 7.3 8.6 6.2 14.8	Per- cent 6.5 5.9 6.6 5.4 7.6 5.3 9.1 7.8	Per- cent 100. 100. 100. 100. 100. 100. 100.	

Bureau of Agricultural Economics. Data for earlier years in 1928 yearbook, table 51.

Table 49.—Corn, shelled: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1924-25 to 1933-34

Year beginning				Grade				m
November	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	Sample	Total
924-25 925-26 926-27 927-28 922-29 929-30 930-31 931-32 932-33 933-34	Cars 7, 883 3, 358 1, 616 9, 682 25, 809 26, 394 18, 176 15, 469 12, 217 39, 099	Cars 80, 883 59, 985 34, 390 87, 801 92, 285 85, 038 67, 781 91, 136 129, 825 117, 613	Cars 56, 542 62, 757 57, 931 78, 352 73, 331 49, 806 70, 928 53, 076 63, 005 47, 066	Cars 34, 431 51, 092 48, 217 47, 890 93, 367 50, 916 45, 629 22, 756 29, 343 14, 113	Cars 31, 370 48, 348 50, 195 34, 638 40, 594 39, 995 14, 745 3, 987 6, 487 3, 953	Cars 17, 252 40, 116 46, 180 27, 553 10, 400 19, 475 5, 262 3, 159 7, 218 2, 592	Cars 12, 345 31, 473 31, 171 29, 006 7, 247 16, 580 3, 745 2, 465 6, 632 3, 064	Cars 240, 70 297, 12 269, 70 314, 92 343, 03 288, 20 226, 26 192, 04 254, 72 227, 50

Bureau of Agricultural Economics.

Table 50.—Corn: Commercial stocks, 1926-27 to 1934-35

DOMESTIC CORN IN UNITED STATES 1

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 busheis	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	
1926-27				36, 019	40, 670	47. 515	49, 759	39, 010	31, 607	36, 268	31, 782	23, 324	
1927-28	24, 913	21,661	20, 254	28, 741	34, 558	44, 786	48, 273	36, 835	27, 497	17,650	13, 571	9,768	
1928-29	6,894	2, 032 3, 639	6, 353 2, 982	18, 565	28, 797	36, 927	37, 744	28, 863	15, 951	13, 740	9,076	6,340 4,220	
1929-30	4, 421 4, 855	4,550	7, 332			24, 944 20, 127		21, 073 19, 697	11, 463 12, 337	7,049 8,175			
1931-32	5, 586	7,341	9,803	12, 664	14, 176	18, 528	22, 693	22, 032	20, 903	16, 117		14, 739	
1932-33	18, 705	27, 973	26, 537	30, 633	33, 855	36, 868	36, 151	31, 958	38, 780	48, 618	63, 274		
1933-34	59,791	62,709	65, 053	70, 540									
1934-35	63, 803	58, 482	50, 166										
		υ	NITE	D STA	res co	ORN II	V CAN	ADA 1	·	·			
1926-27				2, 147	1,715	1,788	1,403	1,781	1, 452	1, 184	1,706	1, 188	
1927-28	2,010			1,891	1,598	1,312	976	626	1,634	1,337	818	510	
1928-29	534	252	268	580	737	601	356	1,759		911	746	480	
1929-30	763		375				120	428	745		135	147	
1930-31	950 500	750 1,143	723 1, 106		481 884	423 872	378 843	476 1,051				557 759	
1932-33	2,826	3, 399	4, 211			2, 221	1,562	1, 387	2,809	3,326		7. 076	
1933-34	7, 707	10,065		10, 159		7,822	6, 839	5, 829				5, 809	
1934-35	6,026		6,047		_,000	-,,				,			
							1	i	1				

¹ Includes domestic corn in store in public and private elevators in 41 markets and corn affoat in vessels or barges in harbors of lake and seaboard ports. Does not include corn in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of corn intended for local use.

¹ Includes United States corn in store at 15 Canadian points or affoat in vessels or barges in the harbors of lake and seaboard ports. Does not include corn in transit to Canadian ports.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

Data for domestic corn in the United States are for stocks on the Saturday nearest the first day of the month: for United States corn in Canada data are for stocks on the Friday nearest the 1st day of the month

TABLE 51.—Corn: Supply and distribution in continental United States, 1926-27 to 1934-35

			Supp	ly				Distribution	ı
Year beginning October	Produc- tion	Stocks on farms Oct. 1	Farm supply Oct. 1	Com- mercial stocks Oct. 1 1	Total stocks Oct. 1	Total supply Oct. 1	Net ex- ports 2	Disap- pear- ance	Stocks end of year
1926-27	1,000 bushels 2,574,511 2,677,671 2,714,535 2,535,546 2,065,273 2,588,509 2,906,873 2,351,658 1,380,718	1,000 bushels 262, 910 191, 679 87, 531 146, 719 131, 845 160, 460 250, 978 317, 863 266, 740	1,000 bushels 2,837,421 2,869,350 2,802,066 2,682,285 2,197,118 2,748,969 3,157,851 2,669,521 1,647,458	1,000 bushels 18,999 24,913 6,894 4,421 4,855 5,586 18,705 59,791 63,803	1,000 bushels 281, 909 216, 592 94, 425 151, 140 136, 700 166, 046 269, 683 377, 654 330, 543	1,000 bushels 2,856,420 2,894,263 2,808,960 2,686,686 2,201,973 2,754,555 3,176,556 2,729,312 1,711,261	1,000 bushels 14,341 17,619 41,399 8,119 1,733 4,058 8,713 3,930	1000 bushels 2, 625, 487 2, 782, 219 2, 616, 421 2, 541, 867 2, 034, 194 2, 480, 814 2, 790, 189 2, 394, 839	1 000 bushels 216, 592 94, 425 151, 140 136, 700 166, 046 269, 683 377, 654 330, 543

¹ For Oct. 1, 1926, Bradstreets' visible supply.
² Includes corn meal.

Bureau of Agricultural Economics.

Table 52.—Corn: Weighted average price per bushel of reported cash sales, Chicago, Kansas City, and six markets combined, 1925-26 to 1934-35

Grade, market, and year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Weight- ed aver- age
No. 3 Yellow, Chicago: 1925-28	Cents 83 71 84 84 88 71 43 25 44 83	Cents 76 75 86 83 88 69 37 23 47 93	Cents 79 74 89 93 85 65 37 24 50	Cents 75 73 95 94 82 61 34 23 49	Cents 72 68 99 94 80 60 33 26 49	Cents 71 71 106 90 82 58 32 34 47	Cents 71 87 108 87 79 56 31 42 51	70 99	Cents 78 102 106 99 82 57 32 56 64	Cents 80 109 102 101 99 46 32 51 76	Cents 79 97 100 101 94 42 30 47 80	Cents 77 84 96 95 82 38 26 40 78	Cents 75 87 101 92 83 60 36 35 52
No. 3 Yellow, Kansas City: 1975-26. 1925-27. 1927-28. 1928-29. 1928-30. 1938-31. 1931-32. 1933-34. 1933-34. 1934-35. 6 markets, all	75 74 79 82 87 69 46 24 43 91	74 75 78 79 84 66 39 22 43 96	75 74 81 87 82 59 39 23 45	70 72 86 87 78 54 36 22 45	67 73 91 88 76 54 34 26 45	69 73 97 85 80 53 34 33	71 91 105 85 78 52 34 39	72 97 102 88 80 52 33 40 57	81 103 100 93 80 53 35 52	83 105 94 99 92 45 33 50 78	80 96 94 99 89 46 29 44 81	77 83 86 92 82 40 24 38 80	74 88 85 85 80 55 37 38
classes and grades: 1 1925-26 1926-27 1927-28 1928-29 1928-29 1928-30 1938-31 1931-32 1933-34 1933-34	71. 0 67. 3 78. 7 79. 8 81. 0 67. 8 43. 5 24. 8 43. 6	68. 3 65. 9 77. 0 78. 4 79. 1 64. 1 37. 1 22. 6 45. 3 95. 5	69. 5 65. 2 78. 6 87. 1 77. 7 61. 0 37. 0 23. 1 47. 9	63. 2 62. 7 84. 1 89. 5 75. 9 57. 2 34. 2 22. 4 47. 2	64. 6 60. 9 89. 6 89. 0 73. 5 56. 8 33. 1 25. 4 48. 1	66. 4 67. 0 98. 2 86. 2 56. 3 32. 6 33. 6 46. 2	68. 0 83. 0 104. 0 84. 6 78. 5 54. 4 31. 9 40. 7 52. 9	66. 9 91. 5 100. 8 89. 7 77. 8 55. 3 30. 7 41. 7 58. 3	76. 3 96. 7 102. 7 98. 1 80. 6 56. 9 32. 4 54. 8 63. 7	78. 3 104. 2 96. 8 99. 9 97. 6 46. 7 32. 1 50. 4 76. 7	76. 5 92. 2 97. 5 100. 0 93. 2 42. 4 29. 8 46. 7 80. 4	73. 2 79. 9 89. 3 93. 8 80. 3 38. 0 25. 6 39. 9 79. 3	69. 0 75. 8 89. 2 88. 5 80. 3 56. 9 33. 2 37. 8 56. 6

¹ Compiled from daily trade papers of markets named. The markets are Chicago, St. Louis, Omaha, Kansas Citty, Minneapolis, and Cincinnati (not included since November 1928). The prices in this section of the table are comparable with prices paid to producers in that the latter are averages of the several prices reported which cover all classes and grades sold by producers.

Bureau of Agricultural Economics, computed by weighing selling price by number of car lots sold as reported in Chicago Daily Trade Bulletin and Kansas City Grain Market Review. Chicago prices for exciter years in 1928 Yearbook, table 60.

Table 53.—Corn: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Weight- ed aver- age
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	Cents 83. 0 74. 5 87. 6 84. 7 91. 9 81. 9 33. 4 21. 6 38. 8 76. 7	Cents 74.6 66.0 73.7 75.4 81.0 66.3 36.6 19.4 40.6 75.7	Cents 70.7 64.5 75.1 76.1 78.0 64.9 34.5 18.8 42.0 85.3	Cents 69. 6 64. 3 75. 2 80. 2 77. 3 61. 7 33. 7 19. 1 43. 9		Cents 66. 6 65. 2 86. 2 88. 7 74. 5 57. 5 32. 2 20. 6 47. 1	65. 7 65. 6	67. 1 73. 0	Cents 68. 6 88. 9 102. 2 86. 9 79. 0 53. 8 29. 4 40. 2 56. 0	Cents 71, 5 92, 4 102, 4 91, 2 77, 1 54, 0 29, 9 55, 4 59, 2	Cents 79. 5 97. 7 98. 2 95. 9 90. 0 50. 8 30. 2 48. 8 72. 7	Cents 76. 2 95. 3 95. 1 97. 2 91. 7 43. 2 28. 0 46. 5 77. 4	Cents 69.9 75.3 84.9 79.8 4.3 79.8 59.4 32.1 31.8 52.2 1 84.7

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State prices averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 59. Only monthly prices are comparable.

Table 54.—Corn, yellow, La Plata: Average spot price per bushel at Buenos Aires and Liverpool. 1925-26 to 1934-35

BUENOS AIRES

Year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Aver- age
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1930-31 1931-32 1932-33 1933-34 1933-34	Cents 84 55 76 97 75 34 32 28 38 51	Cents 86 55 83 93 72 33 28 26 37 56	Cents 79 60 90 98 65 29 27 29 39 49	Cents 73 63 98 96 62 31 30 28 43	Cents 66 63 102 90 59 35 33 27 47	Cents 71 62 89 85 60 33 31 27 40	Cents 68 66 90 79 59 30 29 30 40	Cents 68 69 91 81 56 30 30 31 43	Cents 68 69 90 90 54 30 31 37 47	Cents 69 76 85 87 56 26 32 35 61	Cents 65 77 86 87 50 24 32 37 58	Cents 60 76 95 85 43 25 30 34 52	Cents 72 66 90 89 30 30 31 45
				L	IVER:	POOL							
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	107 95 97 123 96 52 44 37 56 63	110 92 104 120 89 54 37 87 63 65	98 89 110 125 83 48 39 41 59 63	91 93 119 127 79 49 42 40 56	89 88 127 124 75 58 46 40 62	94 88 129 121 91 61 47 40 61	91 94 127 107 85 57 46 44 56	87 91 125 104 76 50 42 44 57	100 91 130 117 84 47 43 50 60	99 98 119 113 90 44 43 46 75	90 97 106 107 77 41 42 47 72	93 96 115 103 63 39 46 64	96 93 117 116 82 50 42 43 62

Bureau of Agricultural Economics. Compiled as follows: Buenos Aires, Boletin Oficial de la Bolso de Comercio de Buenos Aires, averages of daily quotations, converted at monthly average rates of exchange as given in Federal Reserve Bulletin; Liverpool, Broomball's Corn Trade News, averages of Tuesday quotations through Feb. 19, 1929. Beginning Feb. 27, 1929, Wednesday quotations were used. Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period January 1926, to August 1931, when par of exchange was used. Data for earlier years in 1928 Yearbook, tables 62 and 63.

Table 55 .- Corn: Volume of trading in futures at contract markets, by markets and by crop years, 1924-25 to 1933-34, and monthly for 1934

						,	
Year and month	Chicago Board of Trade	Chicago Open Board	Kansas City	St. Louis	Milwau- kee	Minne- apolis ¹	Omaha 2
1924-25 1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33	3, 862. 7 5, 981. 6 6, 588. 9 4, 924. 4 3, 799. 1 4, 318. 4 1, 795. 6 3, 351. 4	Million bushels 124.6 96.4 158.7 175.0 144.4 94.9 173.0 42.9 55.4	Million bushels 282. 6 161. 1 200. 7 290. 1 247. 1 208. 1 208. 9 56. 9		Million bushels 18. 3 14. 5 28. 5 38. 7 27. 1 23. 9 8. 7 13. 8	9.9	0. 2 . 9 1. 0
1933-34	3, 086. 4	44.3	169. 9		13. 6	 	
January 1934 January February March April May June July August September October November December December	65. 6 68. 2 208. 6 244. 7 360. 5 411. 8 555. 4 226. 2 276. 6 354. 5	2.09 1.72 2.44 3.52 2.24 2.27	3. 1 4. 3 12. 8 9. 1 14. 4 23. 5 39. 0 16. 2 20. 2		.5 .5 1.3 .9 2.0 1.5 2.0 1.4 1.0		

¹Trading in corn futures at Minneapolis began Jan. 30, 1922, was discontinued July 31, 1923, and resumed Jan. 31, 1931.

² Trading at Omaha began June 16, 1930, and was suspended Dec. 7, 1932.

Grain Futures Administration.

Table 56 .- Corn: Volume of trading in futures at all contract markets, by months and crop years, 1924-25 to 1934-35

Year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
	Mil-	Mil	Mil- lion	Mil- lion	Mil- lion	Mil- lion	Mil- lion	Mil-	Mil-	Mil- lion	Mil- lion	Mil- lion	Mil-
	lion bushels	lion bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels	oushels		
1924-25_	557	707	710	677	810	670	510	566	463	394	442	335	6,841
1925-26_	317	514	302	236	317	292	237	343	448	439	368	340	4, 153
1926-27_	383	395	261	288	429	313	692	921	575	713	836	588	6,394
1927-28 _		681	511	698	733	745	699	567	553	616	372	467	7, 115
1928-29_		420	690	373	416	466	526	475	520	453	296	269	5, 361
1929-30 _	261	199	196	252	328	283	290	322	498	611	433	461	4, 134
1930-31 _		649	600	474	370	380	346	265	381	373	238	246	4,740
1931-32_		209	119	156	142	204	110	102	98	178	122	106	1,907
1932-33_		99	74	50	87	291	544	631	816	288	202	359	3,586
1933-34 _	310	212	120	70	74	224	258	381	440	602	243	296	3, 230
1934-35	378	332		l	l				1				

Grain Futures Administration.

Table 57.—Corn: Wet-process grindings, 1918-19 to 1934-35

Year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
1918-19 - 1919-20 - 1920-21 - 1921-22 - 1922-23 - 1923-24 - 1924-25 - 1925-26 - 1926-27 - 1927-28 - 1927-28	1,000 bushels 6,398 5,207 2,292 6,174 6,403 5,576 5,433 6,497 6,404 8,064	1,000 bushels 6,029 5,044 2,069 6,001 4,557 5,668 5,520 6,488 5,455 6,301	1,000 bushcis 6,247 7,282 2,934 5,179 5,530 6,757 6,751 7,843 6,618 8,330	1,000 bushels 4,940 5,847 3,683 5,946 5,336 7,152 6,199 7,218 6,511 8,339	1,000 bushels 4,602 7,051 4,163 6,685 5,946 7,835 5,672 8,052 7,336 9,244	1,000 bushels 5,119 3,875 3,456 4,271 5,270 6,437 5,240 6,100 6,851 8,285	1,000 bushels 6,023 5,509 4,887 4,705 6,084 5,027 4,983 5,974 6,365 6,921	1,000 bushels 6,035 6,367 4,577 5,323 5,278 5,621 5,498 6,733 7,299 6,428	1,000 bushels 4,418 6,495 4,195 5,294 4,080 5,835 4,430 6,749 6,727 5,833	1,000 bushels 4,619 6,001 5,772 5,650 5,390 6,433 5,567 7,289 7,309 5,192	1,000 bushels 6,306 4,192 6,092 6,108 5,577 6,368 5,902 6,800 7,561 6,541	1,000 bushels 6,377 3,679 6,569 6,733 6,424 6,926 7,037 7,604 8,612 7,725	1,000 bushels 67,113 66,549 50,689 68,069 65,875 75,635 68,232 83,347 83,048 87,203
1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	5, 435 6, 348 5, 569 8, 952	6, 550 6, 054 5, 241 4, 630 5, 167 4, 801	8, 364 7, 622 5, 990 5, 130 5, 758 4, 421	8, 719 6, 568 5, 575 5, 344 5, 022 5, 020	7, 085 6, 065 5, 441 5, 045 5, 830 5, 938	6,044 6,615 5,492 4,687 7,116 4,953	6, 338 6, 623 5, 580 4, 921 8, 863 5, 524	6, 696 6, 100 5, 738 4, 552 5, 473 6, 997	6,560 6,103 5,168 4,343 6,511 5,983	7, 673 6, 561 4, 664 5, 165 5, 845 6, 792	7,913 6,473 5,912 5,981 4,533 5,017	8,721 6,253 6,318 5,856 6,142 5,501	88, 198 77, 490 66, 554 62, 002 71, 829 69, 899

Bureau of Agricultural Economics.
Compiled from reports of the Corn Refiners' Statistical Bureau and the Corn Industries Research Foundation.

Table 58.—Corn, including corn meal in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

		Year beginning July									
Country	Average 1925-26 to 1929-30		1930-31		1931-32		1932-33		1933–34 1		
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	
PRINCIPAL EXPORT- ING COUNTRIES Argentina	30, 906 23, 233 19, 446	² 21 1,637 376	1,000 bushels 274,044 38,301 3,317 21,880 14,923	1,000 bushels 0 1 1,747	1,000 bushels 386, 849 54, 363 3, 969 10, 998 3, 467	386 27	1,000 bushels 206, 902 3 67,919 8, 775 16, 786 16, 369	(3) 195 25	1,000 bushels 218, 542 4, 965 148 23, 260	1,000 bushels 0 4 244 1, 269	
Netherlands Indies 6 Hungary Bulgaria Union of Soviet So-	4, 876 4, 043 3, 828	13 508	4,728 628 7,744	3, 275	6, 555 123 4, 721	2, 665	6, 808 5, 386 5, 785	15 894 	4, 048 4, 189	7 3,127 0	
cialist Republics_ Indo-China Egypt China 6 Uruguay 6 British India	3, 554 1, 786	0 0 276 0 406 0	2, 478 4, 823 14 1, 063 632 2	0 0 274 0 225 0	10, 897 4, 400 15 1, 560 310 4	0 0 499 0	8, 491 8, 486 369 9 533 2 4	0 0 18 8	5, 125 \$ 11,969 31 2 17	0 0 23 43	
Total	326, 296	3, 237	374, 577	5, 570	488, 231	3, 600	352, 615	1, 155	272, 307	4, 706	
PRINCIPAL IMPORT- ING COUNTRIES											
United Kingdom Netherlands Germany France Belgium Italy Denmark Irish Free State Canada Spain Czechoslovakia Austria Sweden Switzerland Norway Mexico ⁵ Poland Cuba Japan Greece Australia Tunis Algeria Finland	738 239 1,080 42 124 520 0 5 20 0 0 0 0 91 14 0	71, 650 44, 523 42, 826 42, 826 223, 942 18, 676 16, 159 13, 645 13, 645 12, 088 6, 593 5, 1199 4, 583 5, 1199 4, 583 5, 1199 4, 583 5, 1199 4, 583 6, 593 1, 974 5, 1, 702 421 421 421 421 431 432 433 633 633 633 633 633 633 633 633 633	2,595 863 2 1,589 1,166 63 42 0 0 3 177 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	83, 280 48, 785 17, 320 36, 788 27, 224 25, 256 14, 856 20, 679 9, 819 5, 176 16, 868 8, 214 8, 124 8, 120 6, 102 8, 102 1, 100 1, 100	518 0 12 2,992 12 44 1133 2 2 6 6 0 0 0 0 0 27 0	114, 684 69, 910 29, 723 46, 513 35, 421 33, 421 8, 701 10, 617 22, 641 13, 556 7, 117 7, 556 7, 117 7, 556 6, 105 0 634 427 941	223 1 16 2,318 1,694 181 0 0 4 3 0 0 0 0 0 2 1 1,7 0 0	109, 589 58, 945 17, 744 40, 422 32, 194 9, 718 28, 821 16, 446 7, 442 17, 738 9, 373 5, 070 6, 122 17, 738 1, 114 52 229 1, 668 274 679	366 33 0 42 2,185 2,073 171 1 1 7 0 0 0 0 0 0	112, 849 43, 505 10, 493 26, 045 28, 756 6, 603 10, 199 10, 854 6, 585 2, 888 8, 342 20, 514 9, 288 168 14 175 182 92 3, 128 3, 128	
Total	4,818	339, 629	5, 339	342, 384	7, 033	498, 963	4,752	374, 679	4,970	309, 436	

¹ Preliminary.

 ¹ year only.
 Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.
 Imports for consumption.

<sup>Imports for consumption.
4-year average.
Calendar year.
Java and Madura only.
II months' figure.
Beginning July 1, 1932, figures do not include Manchuria.</sup>

Bureau of Agricultural Economics; official sources except where otherwise noted. Malcena or maizena is included with "corn and corn meal."

Table 59.—Corn: Sales of certain products of the wet-process industry. 1927-31

					Cor	n oil	Fe	ed
Calendar year	Corn- starch	Corn sugar	Corn sirup mixed and unmixed	Dex- trines	Crude	Refined	Gluten feed and meal	Corn- oil meal
1927	1,000 pounds 906, 476 838, 605 879, 560 710, 525 635, 974 529, 329 741, 854 666, 869	1,000 pounds 896, 739 968, 601 894, 986 849, 315 802, 052 776, 854 836, 650 633, 233	1,000 pounds f, 064, 821 1, 106, 957 1, 111, 153 1, 025, 970 929, 342 794, 926 1, 000, 941 996, 172	1,000 pounds 103,340 110,169 114,486 89,720 79,186 62,122 86,222 69,947	1,000 pounds 39,524 43,507 53,661 40,004 41,076 35,127 37,246 42,400	1,000 pounds 67,511 74,153 78,913 77,924 71,537 76,437 81,153 87,109	1,000 short tons 648 659 634 576 479 542 508 599	1,000 short tons 38 40 27 25 21 18 23 21

Bureau of Agricultural Economics; compiled from reports of the Corn Refiners' Statistical Bureau.

Table 60.—Oats: Acreage, production, value, and foreign trade United States, 1866-1934

		Aver-		Price per	Farm	Price per bushel	Foreig y	n trade, ear begin	including ning July	meal,
Year	Acre- age har-	age yield per	Produc- tion	bushel received by pro-	value, basis Dec. 1	at Chi- cago, year	Do-		Net ex	ports 4
	vested	acre		ducers Dec. 1 1	price	begin- ning Aug. 1 2	mestic exports	Im- ports	Total	Percent of pro- duction
1866	1,000 acres 7,935	Bushels 29, 3	1,000 bushels 232, 360	Cents	1,000 dollars	Cents	1,000 bushels 826	1,000 bushels 790	1,000 bushels 1.199	Percent
1867 1868 1869	8, 176 8, 897	27. 2 25. 8	222, 605 229, 676 282, 107			54	123 482	986 478	1, 199 825 63	(6)
1869 1870 1871	10, 348 11, 061	29. 7 25. 9 27. 7	282, 107 284, 004 267, 947 306, 218			43 32	122 148 263	2,602 890 927	5 2, 403 5 737 5 665	
1872 1873 1874	11, 789 12, 010 12, 775	27. 7 25. 6 21. 3	326, 759 306, 906 272, 501			26 39	714 813 505	287 192 1,500	428 621 5 995	.1 .2
1875 1876 1877 1878	13, 616 14, 589 14, 816	26. 8 22. 4 29. 4	364, 967 327, 212 435, 330			34 24	1, 466 2, 854 3, 715	261 153 104	1, 221 2, 703 3, 633	.3 .8 .8 1.2
1879 1879	16, 145 15, 955	28. 0 26. 3 26. 0	443, 365 407, 859 415, 440			29	5, 452 766	63 537	5, 390 234	1,2 .1 .1
1880 1881 1882 1883	16, 916 19, 075	25. 5 26. 4 28. 3 29. 4	417, 942 446, 125 540, 462 605, 576		 		403 626 461	1,932 885	290 51,307 5 419	
1884 1885 1886	21, 974	29. 4 29. 1 28. 9 27. 9	640, 520 674, 151 682, 312			28 28	3, 275 6, 203 7, 311	121 94 149	3, 157 6, 109 7, 231	1.0 1.1
1887 1888	26, 272 26, 272 27, 807	26. 5 27. 8	696, 175			1 29	1,375 573 1.191	140 124 132	1, 235 455 1, 060	.2

¹ Calculations of average price and farm value not completed. Beginning with 1919 prices are weighted average prices for crop-marketing season.

2 Compiled as follows: September 1868-July 1899, Chicago Board of Trade annual reports, average of weekly quotations for No. 2; beginning August 1899, Chicago Daily Trade Bulletin, average of daily quotations for No. 3, white, weighted by car-lot sales.

3 Compiled from Commerce and Navigation of the United States, 1866-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce. Oats—general imports, 1986-1933, imports for consumption 1834; oatmeal—general imports, 1886-88 and 1884-1909; imports for consumption 1839-83 and 1910-34. No exports of catmeal reported 1886-84.

4 Total exports (domestic plus foreign) minus total imports. Beginning 1933-34 net exports are domestic exports minus imports for consumption. (See introductory text.)

§ Net imports. Total imports minus total exports (domestic plus foreign).

Table 60.—Oats: Acreage, production, value, and foreign trade, United States, 1866-1934—Continued

				Price	_	Price per	Foreig	n trade, ear begin	iccluding ning July	meal,
Year	Acre- age har-	Aver- age yield per	Produc- tion	per bushel received by pro-	Farm value, basis Dec. 1	bushel at Chi- cago, year	Do-	-	Net exp	oorts 4
	vested	acre		ducers Dec. 11	price	begin- ning Aug. 12	mestic exports	Im- ports	Total	Percent of pro- duction
1889	1,000 acres 28,321	Bushels 28.6	1,000 bushels 809,251	Cents	1,000 dollars	C'ents	1,000 bushels	1,000 bushels	1,000 bushels	Percent
1889	28, 697	29. 0 21. 5	831, 047 609, 122			23 43	15, 107 1, 383	153 42	14, 969 1, 341	1.8
1891	27, 756	30. 1	836, 789			30	10 597	48	10, 546	1.3
1892 1893	28, 168	25.6	721, 824			31	2, 701	49	2,655	1 .4
1893	29, 266	24. 2	836, 789 721, 824 707, 129 750, 009			31	0,290	32	6, 258	.9
1894 1895	29, 556 30, 905	25. 4 29. 9	024 858			29 18	1, 709 15, 157	330 67	1,379 15,117	1.6
1896	30, 248	25. 6	924, 858 774, 929			17	37, 725	131	37, 613	4.9
1897	1 28, 829	1 28.8				20	73, 880	25	73, 855	8.9
1898	29, 327	28.7	842, 205 948, 389 937, 173			25	33, 534	28	33, 506	4.0
1899	29, 540 29, 254	31.9	943, 389	- 			-25-040-			
1899	31, 049	32. 0 30. 5	945, 483			24 26	45, 049 42, 269	55 32	44,095 42,237	4.7
1900 1901 1902 1903	30, 891	25. 9	799, 812			43	13, 278	39	13, 240	4. 5 1. 7
1902	31, 358	34.3	1,076,899	1	1	94	8, 382	150	8, 233	1.8
1903	32, 187 32, 749 33, 426	27.5	QUE ARO			38 32	1,961	184	8, 233 1, 857	9
1904	32, 749	30.9	1,011,556			32	8, 395	56	8,339	.8 4.4
1905	33, 426	33.0	1, 011, 556 1, 104, 395 1, 022, 715 801, 144			31	48, 435 6, 386	40 91	48, 395	4.4
1900	34, 439	30. 4 23. 3	201 144			37 50	2, 519	383	6,379	.6
1908	34, 310	24.2	829, 308			52	2, 334	6, 692	2, 195 5 4, 252	
1907 1908 1909	35, 159	28.6	829, 308 1, 007, 143						1,202	
1909	35,062	28.9	1,013,909	1	i .	42	2, 549	1,063	1,704	.2
1910	36, 844	30.0	1, 106, 162			33	3, 846	140	3,707	3
1911	37, 149 37, 244	23.8	885, 527 1, 353, 273 1, 039, 131			50	2, 678	2,660	30	(8)
1912	37, 244	36.3 27.9	1,000,270			35 40	36, 455 2, 749	765 22, 333	35, 695 18, 858	2.6
1913 1914	37, 213	28.7	1, 066, 328			50	100, 609	670	100, 158	9. 4
1915 1916	38, 802	37.0	1, 435, 270	l		41	98, 960	720	98, 648	6.9
1916	39, 098	29.1	1, 138, 969			54	95, 106	841	94,348	8. 3 8. 5
1917	41,604	34.7	1, 442, 519			71	125, 091	2, 915	122, 273 108, 167	8.5
1918	42, 464 37, 991	33.6	1,428,611			70	109,005	838	108, 167	7. 6
1919 1919	39, 601	27.8 27.9	1, 428, 611 1, 055, 183 1, 106, 603	76. 7	848, 534	80	43, 436	6, 077	37, 365	3.4
1921	42.732	33. 8	1 1.444.291	53.8	776.913	51	9,391	3, 827	5, 831	4
1921	45, 539	23.0	1,045,270	32.2	336, 603	35	21, 237	1,824	19,422	1.9 2.2
1922	1 40, 324	28.5	1, 147, 905	37.4	429, 354	41	25, 413	340	25,087	2.2
1923	1 40, 245	30.5	1, 227, 184	40.7	499, 701	45	8, 796	4, 271	4,550	.4
1924 1924	37, 650 41, 857	34.7 34.0	1, 304, 599 1, 424, 422	47.8	680 379	50	16,777	3, 067	13,926	1.0
1925	44 240	31.9	1, 410, 336	38.8	680, 378 547, 212 457, 766	41	39, 687	212	39, 565	2.5
1926	42, 854	26.6	1 1, 141, 941	40.1	457, 766	43	15,041	135	14,988	2.8 1.3
1926 1927 1928	40, 350	27.1	1,093,097	47.1		55	9,823	233	9,611	1 .9
1928	40, 128	32.9	1, 318, 977	40.7	537, 186	44	16, 251	426	15,825	1.2
1929	. 33, 466	29.7 29.3	992,747	41.9	468, 369	44	7, 966	175	7,680	
1930	30,653	32 2	1, 118, 414 1, 277, 379 1, 126, 913	32.2	1 411 070	35	3, 123	659	2 484	.7
1021	40 084	28.1	1, 126, 913	21.3	239, 953	22	4, 437	85	2,464 4,352	1 .4
1932 1933 1934 ⁷	41, 420	28. 1 30. 1	1,240,048	21. 3 15. 7	239, 953 195, 254	22	5, 361	28	5,333	.4
1933	36, 701 30,395	19.9	731, 500	33. 4 49. 1	244, 128 259, 398	36	1,405	154	1, 251	.2
		17.4	528, 815							

See footnotes 1 to 4 on page 390.

Net imports. Total imports minus total exports (domestic plus foreign).
 Less than 0.05 percent.
 Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns.

Table 61.—Oats: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

				·						Pric	
	Acres	age harv	rested	Yi	eld per	acre	Pro	oduction	n 	crop	
State and division	Aver- age, 1927- 31	1933	1934 1	Aver- age, 1922- 31	1933	1934 1	Aver- age, 1927- 31	. 1933	1934 1	1933	1934 1
Maine	1,000 acres 120 7 60 5 2 8 858 42 958	1,000 acres 130 6 59 5 2 9 820 44 925	1,000 acres 117 7 61 5 2 10 836 44 906		els 40. 0 38. 0 27. 0 30. 0 36. 0 25. 0	Bush- els 40. 0 39. 0 29. 0 32. 0 30. 0 28. 0 33. 0 27. 5	4, 322 285	1,000 bushels 5, 200 228 1, 593 150 72 225 16, 810 1, 188 20, 812	273 1, 769 160 64 300 23, 408 1, 452	Cents 41 56 50 56 55 54 45 44	Cents 51 65 65 64 64 63 56 53
North Atlantic	2, 059	2,000	1, 988	31. 1	23. 1	28.7	64, 073	46, 278	57,021	44. 4	54. 6
Ohio Indiana Illinois Miohigan Wisconsin Minnesota Iowa Missouri North Dakota South Dakota Kehrska Kansas	1, 851 2, 001 4, 236 1, 424 2, 449 4, 337 6, 151 1, 647 1, 841 2, 311 2, 422 1, 325	1, 273 1, 690 4, 039 1, 121 2, 457 4, 484 6, 243 1, 764 1, 703 696 2, 226 1, 528	1, 209 1, 350 3, 029 1, 222 2, 334 3, 767 4, 900 1, 235 766 376 1, 224 1, 238	29. 5 32. 6 32. 2 35. 8 34. 0 35. 8 20. 4 22. 7 26. 6 26. 5	20. 5 17. 0 19. 5 21. 0 26. 0 21. 5 23. 0 18. 5 13. 0 7. 5 10. 5	21. 5 13. 5 11. 0 23. 5 28. 0 19. 3 12. 5 11. 0 9. 0 7. 0 13. 0	45, 707 84, 750 138, 859 214, 018 36, 652 38, 074 59, 223 67, 015	32, 634 22, 139	18, 225 33, 319 28, 717 65, 352 72, 703 61, 250 13, 585	35 32 32 38 34 30 29 34 25 30 29 33	48 45 46 51 48 48 47 48 48 51 49
North Central	31, 996	29, 224	22, 650	31.1	19. 5	15. 7	982, 336	570, 346	356, 077	31.3	47.8
Delaware_ Maryland Virginia. Vest Virginia North Carolina South Carolina Georgia. Florida.	3 54 150 144 173 355 280 9	3 50 168 120 205 370 295 7	44 44 123 108 207 388 336 8	28. 4 20. 0 23. 6 17. 1 21. 9 18. 7 14. 0	24. 0 20. 0 19. 0 16. 5 19. 5 18. 0	19. 5 19. 0 17. 0 17. 0 19. 0	1, 563 3, 189 3, 352 3, 206 8, 117 5, 778	3, 360 2, 280 3, 382 7, 215	2, 398 2, 052 3, 519 6, 596 6, 384	เซอ	55 54 54 55 64 71 70 76
South Atlantic		1, 218	1, 218	20.6	18.8	18. 5	25, 419	22, 914	22, 505	56.7	65. 3
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	1,110	69 21 103 16 1, 161	110 89 110 31 132 20 1,300 1,546	16. 7 17. 8 20. 0 19. 4 23. 3 21. 0	16. 0 16. 0 16. 0 16. 0 16. 3 18. 5	15. 0 19. 0 21. 0 15. 5 25. 0 15. 5	1,778 1,864 716 2,288 399 25,684	1, 104 336 1, 648 261 21, 478	1, 335 2, 090 651 2, 046 500 20, 150	46 58 56 43 46 34	50 52 69 67 62 63 45 45
South Central	3, 114	2, 790	3, 338	22. 5	17.7	18. 2	72, 963	49, 331	60,888	36.7	47.1
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	314 128 134 182 34 10 46 2 150 245 88	383 142 151 162 38 13 50 3 179 259 89	306 132 83 97 23 12 32 170 246 98	26. 9 33. 2 25. 8 27. 6 20. 4 27. 1 35. 2 35. 5 48. 0 30. 2 25. 2	32. 0 21. 0 25. 5 22. 0 29. 0 31. 0 53. 0 23. 5	34. 0 21. 0 23. 5 15. 0 24. 0 26. 0 23. 0 24. 0 24. 0	8, 697 4, 346 3, 399 5, 262 789 299 1, 691 82 7, 292 8, 116 2, 192	6, 511 4, 544 3, 171 4, 131 836 377 1, 550 90 9, 487 9, 842	7, 344 4, 488 1, 743 2, 280 345 288 832 46 6, 800 5, 904	29 33 29 42 44 32 38 35 34	46 40 54 52 61 53 50 54 46 44 42
Western	1, 334	1, 469	1, 201	30.4	29.0	26.9	42, 165	42, 631	32, 324	33. 2	45.7
							_				

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 62.—Oats: Production. world and selected countries, 1894-95 to 1934-35

	Esti- mated	Esti-			<u> </u>	selected o	ountries			
Crop year	world, exclud- ing Russia and China	mated Europe, exclud- ing Russia	United States	Russia	Ger- many	Canada	France	Poland	Eng- land and Wales	Argen- tina
1894-95. 1895-96. 1896-97. 1898-99. 1899-1900. 1899-1900. 1901-1901. 1902-3. 1903-4. 1904-5. 1905-6. 1906-7. 1907-8. 1908-9. 1909-10. 1910-11. 1911-12. 1912-13. 1913-14. 1914-15. 1918-19. 1919-19. 1919-20. 1919-20. 1920-21. 1920-21. 1922-23. 1923-24. 1924-25. 1925-26. 1926-27. 1927-28. 1923-29. 1933-31. 1931-32.	2,865 2,912 2,713 2,832 2,852 2,852 2,852 3,162 3,123 3,524 3,514 3,514 3,629 3,571 3,714 3,712 3,534 3,513	Million bushels 1, 453 1, 484 1, 378 1, 251 1, 454 1, 455 1, 652 1, 662 1, 685 1, 662 1, 683 1, 471 1, 120 1, 320 1, 478 1, 478 1, 572 1, 748 1, 879 2, 060 1, 714 1, 695 1, 695 1, 695 1, 695 1, 879 2, 060 1, 714 1, 695 1, 879 2, 060 1, 714 1, 938 1, 641	Million bushels 750 830 842 937 945 590 1, 077 1, 104 1, 103 1, 106 829 1, 066 886 1, 1435 1, 1430 1, 1444 1, 142 1, 1440 1, 142 1, 142 1, 1410 1, 142 1, 127 1, 127 732 529	Million bushels 683 717 800 664 683 995 854 624 931 800 1, 124 921 959 1, 251 2, 915 3, 807 4, 845 761	Million bushels 430 4311 394 465 474 489 486 514 531 531 531 531 532 412 484 250 310 3345 277 4211 390 427 458 459 376	Million bushels	Nfillion bushels 296 296 296 296 296 296 296 296 296 296	Million bushels	Million bushels 119 105 93 99 102 99 91 115 109 112 99 109 112 106 104 104 104 104 100 88 95 105 107 100 88 95 105 107 107 94 101 107 94 87 88 86 78	Million bushels

8 Preliminary.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

¹ Includes all Russian territory reporting for the years shown.
2 Total Russian Empire, exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

³ Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and the Provinces of Batum and Elizabetpol, in Transcaucasia.

⁴ Beginning this year, estimates for the present territory of the Union of Soviet Socialist Republics, exclusive of Turkestan, Transcaucasia, and the Far East, which territory in 1924-25 produced 20,248,000

⁵ Beginning with this year post-war boundaries, and therefore not comparable with earlier years.

LABLE 63.—Oats: Acreage, yield per acre, and production in specified countries, average 1921–22 to 1925–26, annual 1931–32 to 1934–35

		ì	Асгевре				Yield	Yield per acre	e.			F	Production		
Country	Aver- age 1921-22 to to 1925-26	1981-32	1931-32 1932-33 1938-34	1933-34	1934- 35 1	Aver- age 1921-22 to 1925-26	1931- 32	1932-	1933-	1934- 35 ¹	Aver- age 1921-22 to 1925-26	1931–32	1932-33	1933-34	1934-35 1
NORTHREN HEMISPHERE Vorth America: Canada: United States.	1,000 acres 14,585 42,441	1,000 acres 12,871 40,084	1,000 acres 13, 148 41, 420	1,000 acres 13, 529 36, 701	1,000 acres 13,731 80,395	Bush- els 33.4 29.5	Bush- els 27.1 28.1	Bush- els 31.6 30.1	Bush- els 24.1 19.9	Bush- els 25.1 17.4	1,000 bushels 486, 570 1,251,023	1,000 bushets 348,795 1,126,913	1,000 bushels 416, 034 1, 246, 548	1,000 bushels 326, 695 731, 500	1,000 bushets 345,042 528,815
Total	67,028	52, 955	54, 568	50, 230	44, 126	30. 2	27.9	30.5	21.1	19.8	1, 737, 593	1, 475, 708	1, 662, 582	1,058,195	873, 857
Burgand and Wales Bootland. Irish Free State. Northern Ireland. Northern Ireland. Northern Ireland. Demmark. Demmark. Notherlands. Holdtum. Luromburg. France. Spain. Fortigal. Islay. Switzerland. Germany. Austria. Cachoslovakia. Hustria. Cachoslovakia. Hustria. Cachoslovakia. Hustria. Cachoslovakia. Hustria. Cachoslovakia. Hustria. Lithnania. Lithnania. Lithnania. Lithnania. Lithnania. Lithnania. Lithnania. Lithnania. Lithnania.	2 11 84 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8,	1, 589 887 887 887 888 888 880 880 880 880 881 881 881 881	448 888 888 888 888 888 888 888 888 888	1,402 820 820 820 820 1,226 943 8,127 1,036 1,03	**************************************	祝祝祝花台名敬晓的的说法法计计数上说法式记录记录的记录的记录记录记录记录记录记录记录记录记录记录记录记录记录记录记录记	RSSECRIEZERSSERSERSERSERSERSERSERSERSERSERSERSERS	######################################	######################################	8, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25	88,88,810,88,82,82,82,82,82,82,82,82,82,82,82,82,	22 22 22 22 22 22 22 22 22 22 22 22 22	88.88.88.88.88.89.89.89.89.89.89.89.89.8	45 120 45 150 150 150 150 150 150 150 150 150 15

U.S.S.R., European and Astatlo	25,776	43, 184	38, 111 41, 223	41, 223		22.3	17.5	20.3	25.8		575, 634	755 076	774, 366	774, 366 11, 061, 715	
Total Europe reporting area and production, all years. Estimated European total, excluding U.S.S.R.	43, 693 44, 300	43, 069 43, 500	42, 284 42, 800	41, 836 42, 200	41, 289	36.0	39.2	43.6	46.2	39.6	1, 579, 584 1, 586, 000	1, 688, 451 1, 695, 000	1, 844, 180 1, 851, 000	1, 933, 962	1, 634, 404
Africa: Moroco. Morala Tunis	35 605 126	60 557 72	56 488 54	79 461 61	86 468 49	18.4 21.0 19.4	27. 6 14. 7 31. 6	22. 6 17. 8 35. 7	23.8 21.5 13.5	30.0 27.1 22.5	645 12, 713 2, 439	1, 664 8, 212 2, 273	1, 267 8, 707 1, 929	1,883 9,703 689	2, 584 12, 697 1, 102
Total	766	689	598	581	603	20.6	17.6	19.9	21.1	27.2	15, 797	12, 139	11, 903	12, 275	16, 383
Asia: Turkey Tyria and Lebanon. Syria and Lebanon. Japan. Olosen.	\$ 216 \$ 26 278 278 276	406 27 292 306	294 32 314 289	434 28 314 292	419	447.5 216.7 39.0 16.5	20.0 26.3 37.9 16.8	29.5 29.1 24.4 16.8	33.1 32.1 36.2 9.0	23.8	4 11, 391 3 435 10, 847 4, 545	8, 113 711 11, 081 5, 137	8, 681 931 7, 653 4, 859	14,353 899 11,062 2,633	9, 954
Total Northern Hemisphere reporting area and production, all years. Bathanked Northern Hemisphere total, excitating U.S.B.R. and Ohlina.	101, 727	97, 145 98, 300	97, 776 98, 900	93, 109 94, 200	86, 470 87, 600	32.8	32.8	36.1	32.4	29.3	3, 344, 800	3, 186, 122 3, 210, 000	3, 528, 277 3, 550, 000	3, 019, 684	2, 535, 631 2, 559, 000
SOUTHERN HEMISPHERE Ohlie Uruguay Argeutina Union of South Africa Astralia New Zeland	1, 600 1, 000 1, 000	163 148 2,041 578 1,085	168 2, 208 1, 027 1, 027	264 213 1, 651 78	207 229 2, 397 542	37.3 18.0 32.5 10.3 48.0	30.2 21.0 35.8 17.5 49.8	42.1 6.3 31.6 19.7 63.9	29. 9 15. 1 34. 8	32.5	3, 954 2, 166 59, 286 6, 624 19, 010 5, 996	4, 023 3, 111 72, 980 18, 903 3, 435	7, 068 769 69, 583 20, 200 6, 255	7, 881 3, 218 57, 388 3, 962	77,860
Total Northern and Southern Hemisphere countries reporting area and production, all years.	103, 551	98, 186	99, 984	94, 760	88, 867	32.8	32.8	36.0	32. 5	29.4	3, 404, 086	3, 258, 102	3, 597, 860	3, 077, 072	2, 613, 481
Estimated world total, excluding U.S.S.R. and Ohina	106, 800	102, 400	103, 300	98, 200	92, 200						3, 470, 000	3, 324, 000	3, 664, 000	3, 143, 000	2, 680, 000

Preliminary.
 4-year average.
 2-year average.
 1 year only.

Bursan of Agricultural Economics; official sources and International Institute of Agriculture. "U.S.S.R." means Union of Soviet Socialist Ropublics.

Both acreage and production figures refer to the year of harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere production figures refer to the year of harvests of the Northern Hemisphere countries in 1834 is combined with the Southern Hemisphere harvest which begins into in 1834 and eaded early in 1835.

Table 64.—Oats: Stocks on farms, quarterly, United States, 1925-26 to 1934-35

-		Stocks o	n farms		Saaran		Stocks or	n farms	
Season	Oct. 1	Jan. 1	Apr. 1	July 1 1	Season	Oct. 1	Jan. 1	Apr. 1	July 11
1925-26 1926-27 1927-28 1928-29 1929-30	1,000 bushels 886, 480 830, 864 1, 021, 209 854, 576	1,000 bushels 680, 422 628, 045 766, 567 644, 029	1,000 bushels 519, 971 398, 348 332, 957 447, 773 368, 853	1,000 bushels 229, 145 150, 728 111, 841 177, 681 144, 116	1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 981, 352 886, 863 973, 979 608, 005 446, 287	1,000 bushels 746, 977 655, 804 763, 195 456, 283 346, 258	1,000 bushels 429,885 365,794 467,976 275,425 208,185	1,000 bushels 168, 554 142, 683 204, 372 107, 577

¹ Includes old erop only.

Table 65.—Oats: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

					re	I GETT OF	Se or re	cerbra	աառու	;				
⊳eason			<u> </u>			Ī				ī	ī		·	
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Sea- son
	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-	Per-
	cent	cent	cent	cent	cent	cent	cent	cent	cent	cent	cent	cent	cent	cent
1924-25	0.2	6.8	18. 3	18.3	12.6	7.7	8.3	7.7	4.8	3.3	2.7	4.9	4.4	100.0
1925-26	.2	9.6	20.0	13. 5	10.9	7.4	7.0	6.0	6.2	5.3	4.3	4.6	5.0	100.0
1926-27	1.3	11.4	20.4	12.4	9.1	6.5	6.7	6.6	6.2	5.9	4.4	5.0	4.1	100.0
1927-28	1.4	8.4	21.7	14.5	10.3	6.6	6.6	6.3	6.5	6.0	3.9	4.4	3.4	100.0
1928-29	1.1	6.8	23.7	13. 5	10. 2	6.5	7.5	5.4	6.6	5.0	4.8	4.1	4.8	100.0
1929-30	1.0	11.3	30. 2	12.8	8.7	5.4	5.1	4.2	4.4	4.4	4.8	4.3	3.4	100.0
1930-31	1.4	12.6	27.5	13, 2	8.7	4.4	5.0	4.4	5.5	4.5	5.0	3.8	4.0	100.0
1931-32	3.3	15. 2	21.5	11.3	7.5	5.6	5.6	5.6	5.5	5. 2	5.3	4.9	3, 5	100.0
1932-33	13.4	22.4	11.5	7.4	5. 1	5. 1	4.2	4.2	3.9	5.8	7.5	9.4	.1	100.0
1933-34	2.9	22.4	21.0	14.0	6.9	5.4	4.6	3.9	3.8	4.1	3, 5	4.0	3, 5	100.0
]	1	Į	}]	i	I	1	1		1	1		

Percentage of receipts during-

Bureau of Agricultural Economics.

Table 66.—Oats: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1924-25 to 1933-34

			Grade			
Year beginning August	No. 1	No. 2	No. 3	No. 4	Sample	Total
1924-25	Cars 1, 489 2, 197 1, 465 2, 838 4, 408 4, 106 10, 344 1, 394 1, 370 2, 926	Cars 33, 631 53, 587 19, 692 29, 106 14, 144 26, 053 36, 939 21, 966 24, 110 15, 547	Cars 110, 377 75, 634 49, 581 64, 444 77, 823 71, 757 35, 186 40, 303 49, 901 27, 050	Cars 24, 580 17, 989 28, 548 19, 397 20, 684 11, 822 8, 137 4, 059 7, 936 6, 638	Cars 14, 853 6, 260 17, 695 5, 728 9, 305 3, 097 983 926 1, 213 1, 703	Cars 184, 930 155, 667 116, 981 121, 513 126, 364 116, 835 91, 589 68, 648 84, 530 53, 864

Bureau of Agricultural Economics.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 67.—Oats: Commercial stocks, 1926-27 to 1934-35

DOMESTIC OATS IN UNITED STATES:

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1926-27	1,000 bushels 17, 686 3, 338 8, 592 11, 028 7, 525 10, 657 28, 430 23, 369	1,000 bushels 11,886 2,445 8,668 9,102 8,021 12,627 35,589 22,732	23, 224 15, 992 24, 318 25, 844 15, 013 27, 273	28, 597 32, 928 17, 372 28, 895 50, 846	25, 682 16, 900 32, 762 33, 265	24, 784 15, 399 30, 064 30, 504 18, 161 27, 484 48, 755	47, 123 23, 815 17, 314 29, 019 30, 896	1,000 bushels 47, 421 21, 949 16, 219 26, 097 26, 770 17, 096 26, 406 45, 177	1,000 bushels 45, 105 21, 127 16, 801 22, 937 23, 029 17, 938 25, 831 42, 399	1,000 bushels 38, 481 16, 803 14, 003 19, 484 18, 213 15, 796 24, 195 38, 190	1,000 bushels 30, 513 11, 667 11, 493 16, 519 13, 930 13, 621 21, 878 33, 013	1,000 bushels 21,032 7,171 10,591 13,247 9,681 11,839 23,959 26,237
		τ	NITE	D STA	TES O	ATS I	N CAN	IADA 2				
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	1, 759 60 346 936 484 126 677 288	1, 253 4 334 1, 106 207 144 661 241	1, 238 978 2, 177 2, 679 110 1, 317 918 169	1, 435 2, 326 4, 293 2, 478 199 1, 530 969 139	1, 110 1, 031 4, 435 2, 425 230 1, 407 845 153	825 547 4, 410 2, 103 467 1, 151 1, 133 126	352 670 644 3, 630 1, 475 165 1, 094 871	11	218 438 424 2, 852 834 2 392 238	626 0 158	57 716 1, 934 821 73	1, 432 239 529 1, 580 936 226 656 290
			CAN	ADIA	N OAT	SIN	CANAI	OA 3				·
1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35		6, 689 8, 874 6, 272	5, 974 8, 806 5, 664	16, 449 9, 594 9, 527 7, 031 15, 893	9, 636 19, 777 11, 178 10, 823 8, 314 19, 328	15, 145 20, 998 13, 839 13, 577 9, 115 20, 192	20, 665 21, 233 15, 052 15, 582 9, 262	11, 879 21, 085 20, 109 14, 200 14, 624 9, 389	13, 027 22, 709 18, 489 13, 799 14, 277 9, 767	12, 918 24, 079 16, 065 14, 877 14, 800 11, 864	12,070 19,753 12,553 11,873 11,054 11,023	7, 734 9, 270 17, 892 10, 340 10, 601 6, 005 9, 692 10, 682
		O	ANAD	IAN C	ATS I	N UNI	TED 8	STATE	8 4			
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34	122	12 341 146 13 0	123 341 21 41	141 283 49 41	211 429 27 41 0	711 670 7 32	900 699 255 32	346 704 634 167	247 801 615 3	117 516 488 10 1	722 722 330 78 1	199 577 264 238 40 0

¹ Includes domestic eats in store in public and private elevators in 41 markets and eats affeat in vessels or barges in harbors of lake and seaboard ports. Does not include eats in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of eats intended for local use.

1 Includes United States eats in store at 15 Canadian points or affeat in vessels or barges in the harbors of lake and seaboard ports.

2 Includes practically all Canadian eats held within Canadian boundaries, exclusive of farm and certain and certain control of the contr

⁴ Includes Canadian oats in store and afloat at 10 United States lake and seaboard ports but not Canadian oats in transit on lakes or canals.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market

Data for domestic and Canadian oats in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian and United States oats in Canada data are for stocks on the Friday nearest the 1st day of the month.

1932–33. 1933–34. 1934–35.

mill stocks.

Table 68.—Oats: Supply and distribution in continental United States, 1926-27 to 1934-35

			Supp	oly]	Distribution	1
Year begin- ning July	Produc- tion	Stocks on farms, July 1	Farm supply, July 1	Com- mer- cial stocks, July 1 1	Total stocks, July 1	Total supply, July 1	Net exports ²	Disap- pearance	Stocks, end of year
1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1931-33 1933-34 1934-35	1,000 bushels 1,141,941 1,093,097 1,318,977 1,118,414 1,277,379 1,126,913 1,246,548 731,500 528,815	1,000 bushels 229, 145 150, 728 111, 841 177, 681 144, 116 168, 554 142, 683 204, 372 107, 577	1,000 bushels 1,371,086 1,243,825 1,430,818 1,296,095 1,421,495 1,295,467 1,389,231 935,872 636,392	1,000 bushels 38, 768 17, 686 3, 338 8, 592 211, 028 7, 525 10, 657 28, 430 23, 369	1,000 bushels 267, 913 168, 414 115, 179 186, 273 155, 144 176, 079 153, 340 232, 802 130, 946	1,000 bushels 1,409,854 1,261,511 1,434,156 1,304,687 1,432,523 1,302,992 1,399,888 964,302 659,761	1,000 bushels 14, 988 9, 611 15, 825 7, 680 2, 464 4, 352 5, 333 1, 251	1,000 bushels 1, 226, 452 1, 136, 721 1, 232, 058 1, 141, 863 1, 253, 980 1, 145, 300 1, 161, 753 832, 105	1,000 bushels 168, 414 115, 179 186, 273 155, 144 176, 079 153, 340 232, 802 130, 946

¹ For July 1926, Bradstreet's visible supply.
² Includes outmeal.

Bureau of Agricultural Economics.

Table 69.—Oats: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed average
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 45.3 37.7 46.3 56.2 42.9 33.1 23.3 17.5 39.1 40.6	Cents 40. 7 37. 9 44. 4 38. 4 42. 7 35. 7 19. 8 14. 8 32. 2 45. 8	Cents 38.1 35.6 43.9 36.7 44.1 36.1 20.0 14.4 32.3 50.3	Cents 37. 2 39. 0 44. 6 39. 0 44. 8 34. 7 20. 1 13. 1 27. 9 50. 5	Cents 37. 6 39. 8 45. 1 39. 8 43. 1 31. 5 23. 2 13. 1 31. 4 51. 1	Cents 39. 1 41. 1 48. 1 42. 5 43. 6 32. 3 23. 0 13. 0 31. 4 53. 9	Cents 40.0 42.6 49.3 43.7 43.1 31.1 22.7 13.4 32.5	Cents 39. 2 43. 4 51. 3 47. 0 43. 0 30. 7 22. 8 13. 3 34. 1	Cents 38.8 43.4 54.5 46.6 41.4 30.1 22.8 13.7 33.9	Cents 39. 4 43. 2 56. 9 45. 8 42. 4 30. 2 22. 8 17. 0 32. 6	Cents 39. 5 45. 4 62. 0 44. 6 40. 9 28. 6 21. 8 21. 7 32. 7	Cents 38. 9 48. 0 61. 4 42. 5 39. 3 26. 1 19. 8 23. 1 38. 9	Cents 38.8 40.1 47.1 40.7 41.9 32.2 21.3 15.7 33.4 149.1

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 77. Only monthly prices are comparable.

Table 70.—Oats, No. 3, white: Weighted average price per bushel of reported cash sales, Chicago, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Weight- ed aver- age
1925-26 1926-27 1927-28 1928-29 1928-29 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 41 38 47 38 43 39 21 17 36 49	Cents 39 38 47 41 48 88 22 17 35	Cents 39 44 48 42 47 36 23 15 32 52	Cents 40 42 49 44 45 33 26 15 34	Cents 42 46 54 56 45 34 25 15 35	Cents 42 46 55 50 45 32 25 15 37	Cents 41 43 56 50 44 32 24 15 36	Cents 40 44 59 48 43 31 22 17 33	Cents 42 45 63 48 43 30 23 22 32	Cents 41 50 67 45 41 28 23 25 35	Cents 40 49 68 45 38 27 21 30 43	Cents 42 45 56 47 35 23 18 39 45	Cents 41 43 55 44 44 355 22 22 36

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold as reported in Chicago Dally Trade Bulletin.
Data for 1899–1923 available in 1924 Yearbook, table 94; for 1924 in 1934 Yearbook, table 69.

Table 71.—Oats, including oatmeal, in terms of grain: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

				Y	ear begin	ning Jul	y			
Country	Average to 19	1925-26 29-30	1930)-31	1931	-32	1932	?-33	1933	-34 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Argentina Germany. United States. Canada. Czechoslovakia Irish Free State Rumania. Poland Union of Soviet Socialist Republics. Hungary. Algeria. Tunis. Yugoslavia I	16, 656 3, 861 3, 676 3, 305 3, 302 2, 713 2, 517 2, 134 1, 764 1, 556 495	1,000 bushels 2 91 15,581 207 2,899 1,260 1,559 2 1,499 0 2 588 81 1 48	1,000 bushes 45,036 45,036 45,036 1,752 3,123 10,35 6,512 2,408 73 4,819 1,901 1,7779	1,000 bushes 123 2,751 638 714 69 2,421 0 55 0 363 4224 234 380 7,960	1,000 bushels 52, 195 30 4, 437 11, 055 2, 435 230 230 17 923 655 4	1,000 bushels 73 1,115 65 1,817 564 2,410 0 39 0 85 1,253 0,43	1,000 bushels 33,892 635 5,361 14,158 682 9,455 145 4 2,067 863 1,670 1,252 483 2 71,074	1,000 bushels 15, 275 1, 275 15, 2, 144 2, 794 4 0 30 0 0 0 200 1 2	1,000 bushets 20,970 6,127 1,406 8,336 4,031 2,675 84 41,619 947 8,674 2,579 177 146 104	1,000 bushels 360 3143 21 2 2 0 0 0 874 68 60
PRINCIPAL IMPORT- ING COUNTRIES	100, 000	20,011	117, 778	1,800	80,072	1,102	11,0/2	2,000	01,010	1, 100
United Kingdom Switzerland Belgium Netherlands Italy France Austria Denmark Sweden Finland Cuba Letvia 6 Norway Estonia Australia Union of South Africa Japan 6	5 46 412 9 648 8 217 902 25 0 110 8 0 155	30, 339 10, 936 8, 210, 7, 851 7, 016 6, 598 6, 092 3, 255 2, 956 1, 891 1, 157 1, 127 714 693 276	1, 237 13 49 1, 173 13 65 452 24 0 16 13 0 267	35, 576 14, 263 10, 794 10, 659 12, 001 6, 589 4, 550 3, 779 963 570 183 570 183 25	666 15 104 1600 1 24 2237 770 62 0 0 5 0 360 84	33, 309 15, 645 5, 601 8, 184 11, 506 9, 050 4, 984 2, 166 3, 946 405 24 857 24 19 96 8	348 10 55 82 0 15 4 232 372 372 35 4 4 0 392	23, 730 15, 642 3, 306 8, 251 4, 979 2, 131 1, 243 1, 972 401 0 16 71 3	566 10 4 59 1 556 3 133 79 27 0	21, 131 14, 827 1, 364 3, 788 3, 7, 781 843 1, 288 1, 636 2, 886 1, 783
Total	3, 863	89, 367	3, 480	107, 167	2, 490	96, 498	1, 599	71, 337	983	57, 37

¹ Preliminary.
2 3-year average.
3 Imports for consumption.
4 Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.
5 Calendar year.
6 Year beginning Aug. 1, International Yearbook of Agricultural Statistics.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Table 72.—Barley: Acreage, production, value, and foreign trade, United States. 1919-34

				Price		Price per	Foreign flour, July	trade, and ma	including lt, year b	barley,
Year	Acre- age	Aver- age yield	Produc-	per bushel re-	Farm value, basis	bushel at Chi- cago,			Net ex	ports 4
,	har- vested	per acre	tion	ceived by pro- ducers Dec. 1 1	Dec. 1 price	year begin- ning August ²	Domes- tic ex- ports	Im- ports	Total	Per- cent- age of produc- tion
1010	1,000 acres	Bushels	1,000 bushels	Cents	1,000 dollars	Cents	1,000 bushels	1,000 bushels	1,000 bushels	Percent
1919 1919 1920 1921 1922 1923 1924	7, 151	18. 9 19. 9 23. 0 18. 8 23. 2 22. 2 25. 5	182, 025 131, 086 171, 042 132, 702 152, 908 158, 994 159, 159	124. 4 84. 4 47. 8 49. 9 54. 6	163, 045 144, 276 63, 471 76, 314 86, 868	145 78 61 65 72	34, 691 27, 255 27, 546 21, 909 13, 913	335 20 8 38 55	34, 356 27, 234 27, 538 21, 871 13, 858	26. 2 15. 9 20. 8 14. 3 8. 7
1924 1925 1926 1927 1928 1929	7, 038 8, 186 7, 917 9, 465 12, 735	23. 8 23. 5 20. 8 25. 4 25. 9 20. 4	167, 314 192, 779 164, 467 240, 057 329, 625 \$63, 590	74. 2 61. 4 57. 9 68. 9 56. 8	124, 086 118, 355 95, 288 165, 421 187, 133	90 72 77 91 60	28, 543 30, 448 19, 655 39, 274 60, 295	48 53 49 45 45	28, 495 30, 395 19, 605 39, 230 60, 249	17. 0 15. 8 12. 0 16. 3 18. 3
1929 1930 1931 1932 1933 1934 ⁸	13, 523 12, 666 11, 424 13, 346	20. 7 24. 0 17. 4 22. 6 15. 6 16. 6	280, 242 303, 752 193, 543 302, 042 155, 825 118, 929	53. 9 40. 4 32. 5 22. 0 43. 3 71. 0	150, 946 122, 620 64, 563 66, 394 67, 531 84, 439	62 54 40 38 72	24, 054 11, 443 5, 469 9, 399 6, 112	41 1, 413 1, 509 1, 406 4, 560	24, 013 10, 030 3, 960 7, 993 1, 552	8.6 3.3 2.0 2.6 1.0

5 Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns.

¹ Beginning with 1919 prices are weighted average prices for crop-marketing season.
² From Bureau of Labor Statistics, wholesale price bulletins—monthly quotations, August 1919-September 1927, Fair to Good malting. Beginning October 1927, grade reported as feeding, but as quality remained unchanged, no change was made in comparative prices.
³ Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce. Malt converted to terms of barley on the basis that 1.1 bushels of malt is the product of 1 bushel of barley. Barley flour converted on the basis that 1 barrel of flour is the product of 9 bushels of barley. Exports of flour not reported prior to 1919. Barley—imports for consumption, 1919-34. Malt—imports for consumption, 1919-34. Flour—imports for consumption, 1919-34. In the sum of the product of 1 bushels of barley. Exports of 1919-34. Flour—imports for consumption, 1919-34. Malt—imports for consumption, 1919-34. In the sum of the product of 1919-34. In the product of 1919-34.

Table 73.—Barley: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harve	ested	Yield	l per a	cre	Pr	oduction	L	Price crop	
State and division	Aver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	1933	19341
MainevermontNew YorkNew JerseyPennsylvania	1,000 acres 3 5 187 1 38	1,000 acres 5 4 165 1 81	1,000 acres 4 4 162 1 68	Bushels 29. 6 26. 5 27. 0 28. 8 23. 7	Bush- els 31.0 24.0 20.0 28.0 25.0	Bush- els 30.0 27.0 24.5 27.0 25.5	1,000 bushels 87 132 4,975 31 951	1,000 bushels 155 96 3,300 28 2,025	1,000 bushels 120 108 3,969 27 1,734	Cents 64 65 57 58 58	Cents 73 74 71 61 66
North Atlantic.	234	256	239	26.8	21.9	24.9	6, 176	5, 604	5, 958	57.7	69.6
Ohio	405 239 696 1,929 602 12 2,303	44 28 319 250 805 1,850 586 15 1,758 493 799 408	19 21 93 188 741 1,536 457 22 791 237 360 265	26. 0 21. 4 29. 8 25. 0 30. 4 25. 4 29. 4 29. 0 19. 4 18. 1 19. 0 21. 6 15. 4	15. 0 10. 0 15. 0 13. 0 22. 0 15. 5 16. 0 17. 0 10. 0 7. 0 10. 5 8. 0	17. 5 13. 0 9. 5 18. 0 26. 0 15. 7 12. 5 10. 0 9. 0 7. 5 7. 5	3,963 1,026 11,627 6,130 21,288 48,121 17,933 237 39,577 32,485 13,439 9,628	660 280 4, 785 3, 250 17, 710 28, 675 9, 376 255 17, 580 3, 451 8, 390 3, 264	332 273 884 3,384 19,266 24,115 5,712 220 7,119 1,778 2,700 1,988	46 50 50 52 56 47 44 57 35 39 29	57 66 79 75 96 84 76 84 65 70
North Central	9, 269	7, 355	4, 730	22. 1	13. 3	14.3	205, 453	97, 676	67,771	44.4	82.2
Maryland Virginia West Virginia North Carolina	14	23 35 4 17	22 36 4 16	28. 9 26. 3	26. 0 24. 5 23. 0 16. 0	28. 5 24. 5 20. 0 17. 0	322 380 336	598 858 92 272	627 - 882 - 80 - 272	52 60 56 79	59 65 67 80
South Atlantic	43	79	78	24. 8	23.0	23. 9	1,049	1,820	1,861	60. 1	65. 3
Kentucky	6 14 76 194	12 21 80 172	10 19 110 189	23. 4 18. 2 15. 2 18. 3	23. 0 18. 0 9. 0 10. 0	21. 0 17. 0 11. 5 13. 0	160 256 1, 205 3, 472	276 378 720 1,720	210 323 1, 265 2, 457	58 67 47 45	66 79 63 59
South Central	291	285	328	17. 3	10.9	13. 0	5, 093	3,094	4, 255	49.3	62. 1
Montana. Idaho Wyoming. Colorado. New Merico. Arizona. Utah Nevada. Washington Oregon California.	136 108 513 9 9 36 6 55	176 143 89 430 13 20 87 5 74 113 934	123 134 43 189 10 222 31 5 59 98 1,055	22. 6 30. 8 22. 2 18. 6 17. 4 30. 5 35. 3 37. 2 31. 4 27. 6 26. 4	13. 5 29. 0 18. 0 16. 0 18. 0 35. 0 31. 0 35. 0 29. 5 26. 2	18. 0 32. 0 18. 0 16. 0 12. 0 29. 0 27. 0 28. 0 30. 0 26. 5 21. 5	4, 585 4, 319 2, 305 9, 966 168 296 1, 401 237 1, 813 2, 262 25, 320	2,376 4,147 1,602 6,880 234 700 1,147 150 2,590 3,334 24,471	2, 214 4, 288 774 3, 024 120 638 837 140 1, 770 2, 597 22, 682	38 35 39 31 46 49 40 48 40 41 40	60 52 70 70 73 53 63 59 55 62 48
Western	2,126	2, 034	1, 769	25, 1	23. 4	22.1	52, 673	47, 631	39, 084	38. 4	53.0
United States	11,963	10, 009	7, 144	22. 7	15, 6	16.6	270, 11 1	155, 825	118, 929	43. 3	7L0

¹ Preliminary. ² 8-year average.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

TABLE 74.—Barley: Acreage, yield per acre, and production in specified countries, average 1921–22 to 1925–26, annual 1931–32 to 1934–35

			Астевде				X.	Yield per acre	sre			F	Production		
Oountry	Average 1921–22 to 1925–26	1931-32	1931-32 1932-33	1933-34 1934-35	1934-351	Average 1921–22 to 1925–26	1931–32	1932-33	1031-32 1032-33 1033-34 1034-35	1934-351	Average 1921–22 to 1925–26	1931–32	1932-33	1933-34	1934-351
NORTHERN HEMISPHERE North America: Canada. United States. Mexico	1,000 acres 3,022 7,210 647	1,000 acres 3,768 11,424 370	1,000 acres 3,758 13,346 394	1,000 acres 3,658 10,009	1,000 acres 3,612 7,144	Bushels 25.4 22.3 6.0	Bushels 17.9 17.4 8.5	Bushels 21. 5 22. 6 7. 7	Bushels 17. 3 15. 6 8. 3	Bushels 17.6 16.6	1,000 bushels 76,899 160,939 3,909	1,000 bushels 67,383 198,543 3,158	1,000 bushels 80,773 302, 042 3, 051	1,000 bushels 63, 359 155, 825 3, 166	1,000 bushels 63,742 118,929
Estimated North American total	10, 900	15,600	17, 500	14,000	11,100						242, 000	269, 000	386, 000	222, 000	186,000
Europe: England and Wales England and Wales England Noway Sweden Demmark Netherlands Belgium France Byain Portugal Italy Germany Austria. Cacchoslovakia Hungary. Yucoslavia Buligaria Buligaria Buligaria Buligaria Enimania Buligaria Enimania Enima	288 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0.00 1 10 00 10 10 00 10 10 00 10 10 10 10	901 901 902 903 904 905 905 905 905 905 905 905 905	751 90 1177 1177 1282 4,633 4,633 1,1,636 1,1,197 1,037 1,038 1,1,197 1,038 1,1,197 1,038 1,1,197 1,038 1,1,193 1,193 1,1,193 1	861 96 96 145 145 145 890 70 70 70 70 70 70 70 70 70 70 70 70 70	28888888898989898888888888888888888888	884888448891184888888898999999999999999	244882476882223362384238423842384238423842384238423842384	\$47.88.59.68.99.46.88.89.89.89.89.44.89.89.49.89.89.89.89.89.89.89.89.89.89.89.89.89	88 83 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	6,6,27,6,27,6,27,6,27,6,27,6,27,6,27,6,	36,000 4,200 4,200 4,200 5,200	35, 788 9, 78	29, 44, 44, 45, 45, 45, 45, 45, 45, 45, 45	8, 28, 28, 28, 28, 28, 28, 28, 28, 28, 2
Total Europe reporting area and production, all years	26,099	28,749	27, 950	27, 551	27,723	23.1	23.9	27.7	28.0	25. 5	603, 182	686, 618	774,876	772, 489	707, 228

Estimated European total excluding Union of Soviet Socialist Republics.	26, 300	29,000	28, 200	27,800	28,000						606,000	690,000	779,000	776,000	711,000
Africa: Morocco Algeria Funds: Bgypt.	2,862 3,017 1,033	3, 221 3, 178 1, 223 306	3, 298 3, 339 1, 507	3, 752 3, 450 927 292	3, 793 3, 093 988 284	14.1 10.2 6.6 30.0	18.3 6.8 31.7	14.3 9.3 10.4 33.0	13.4 10.4 7.9 31.6	17.0 12.3 7.0 31.8	40, 304 30, 779 6, 843 11, 427	50, 030 27, 068 8, 268 9, 693	47, 146 30, 901 15, 616 12, 066	50, 408 35, 991 7, 349 9, 236	64, 303 38, 121 6, 890 9, 032
Estimated African total	8, 100	8, 500	9, 300	9,000	8, 700						101,000	111,000	115,000	111,000	125,000
Asia: Turkay India Syria and Lebanon Japan. Chosen.	2, 146 7, 501 1,796 2, 630 2, 131	3, 769 7, 635 2, 067 2, 410	3, 401 7, 384 2, 107 2, 445	3, 312 7, 406 1, 924 2, 484	3, 294 1, 862 2, 179	\$ 29.5 17.8 4 9.5 31.4 17.2	20. 2 14. 6 16. 9 36. 5	14.2 15.1 11.7 36.9 17.9	22.2 14.8 17.1 34.8	26.2 18.6 38.4 21.6	8 57, 482 133, 793 7, 300 82, 490 36, 607	76, 184 111, 627 14, 314 76, 518 41, 861	48, 226 111, 440 9, 115 77, 741 43, 862	73, 432 109, 713 13, 062 66, 982 44, 400	86, 311 11, 148 71, 507 47, 163
Estimated Asiatic total	17, 200	19, 500	18,800	18,800	18, 400	4					347,000	356, 000	318, 000	336, 000	357,000
Total Northern Hemisphere countries reporting are and production, all years Estimated Northern Hemisphere for a exiduity Union of Soviet Socialist Republics and China	61, 327	60, 990	62, 263	58, 122	54, 576	21.7	20.7	23.2	22. 3	22.4	1, 114, 252	1, 265, 480	1, 442, 364	1, 292, 542	1, 224, 374
Ohlie SOUTHERN HEMISPHERE Argentine. Union of South Africe.	162 504 97 307	1,011 76 342	1, 283	1,379	1, 706 83	33.0 19.7 19.7	29. 2 19. 6	40.0 25.1 20.6	26.28 26.11	26.1	5, 347 9, 924 1, 189 6, 048	3, 097 19, 771 6, 553	6, 203 32, 150 9, 136	6, 723 36, 008	42,714
Estimated Southern Hemlsphere	1, 500	2,000	2, 600	2,700	2,900	1					31,000	39,000	67,000	000'00	65,000
Total Northern and Southern Heml- sphere countries reporting area and production, all years. Estimated world total excluding Union of Soviet Socialist Republics and Ohina.	61, 831	62, 001	63, 576	59, 501	56, 281	21.7	20.7	23.2	22.3	22. 5	1, 124, 176 1, 285, 251 1, 327, 000 1, 465, 000	1, 286, 261	1, 474, 514 1, 328, 550 1, 655, 000 1, 504, 000		1, 267, 088
¹ Preliminary.			2-year	2-year average			-	1 year only.	ıly.			4 4-year average	rerage.		

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Both agrees and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere harvest which begins late in 1934 and eadle saty in 1934. a I year only. 2-year average. reduminary.

Table 75.—Barley: Production, world and selected countries, 1894-95 to 1934-35

										,
	Esti- mated world.	Esti- mated Europe,			S	selected o	countries			
Crop year	exclud-	exclud-	TT 7		a			l		
	ing	ing	United	Rus-	Ger-	Japan	Canada	India	Spain	Ru-
	Russia	Russia	States	Sia ·	many					mania
	Million	Million	Million	Million	Million	Million	Million	Million	Million	Million
	bushels	bushels	bushels		bushels	bushels	bushels		bushels	bushels
1894-95	1,034	547	74	197	133	81			57	17
1895-96	1,001	529	104	226	131	80			47	22 32
1896-97	974	530	97	254 239	127	71 73			36	32
1897-98 1898-99	1,040	483 566	103 98	307	120 132	83			46 73	21
1899-1900	1,040	536	118	227	140	77			54	31
1900-1	1,035	525	97	237	141	82			57	1 ,
1901-2	1,090	573	124	240	156	83			80	1 56
1902-3	1, 127	595	146	338	145	74			81	2
1903-4	1, 108	596	149	357	156	60			64	30
1904-5	1,074	515	166	346	138	81			54	30 15 24 25 30
1905-6	1,071	535	172	347	137	77			46	26
1906-7	1, 215	613	179	331	146	84			90	34
1907-8	1, 145	572	151	377	164	90			54	20
1908-9	1, 121	539	171	402	143	87	47		70	26 34 20 13 20 26 26 21 27 26 28
1909-10	1, 326	624	173	502	164	87	55		79	20
1910-11	1, 213	563	142	488	136	82	29		76	29
1911-12	1,314	609	145	437	148	86	44 49		87	26
1913-14	1,322	592 635	197 159	- 496 600	163 172	91	48		60	21
1914-15	1,379 1,198	547	178	2 433	144	101 86	36	125	69 72	20
1915–16	1, 222	477	207	3 429	114	95	54	143	84	20
1916-17	1, 178	507	159	4 305	128	89	43	148	87	30
1917-18	1.140	427	182	325	5 86	89	55	156	78	00
1918-19	1, 246	424	225	020	94	6 89	77	156	90	8 5
1919-20	1, 104	483	131		77	95	56	130	82	39
1920-21	1, 233	554	171	216	82	92	63	150	90	68
1921-22	1, 220	557	133	118	89	88 87	60	117	89	68 44 94
1922-23	1, 277	588	153	197	74	87	72	146	78	94
1923-24	1,377	649	159	262	108	71	77	145	112	61
1924-25	1, 297	566	167	201	110	75	89	137	84	31
1925-26	1, 465	672	193	275	119	91	87	123	99	47 77
1926-27	1, 435	674	164	252	113	88	100	121	96	77
1927-28 1928-29	1, 457	659	240	206	126	82	97	119	92	58 69
1929-30	1,670	743	330 280	260	154	81	136	98	82	69
1930-31	1,740 1,676	828 759	280 304	331 311	146	80	102	118	97	126
1931-32	1, 676	690	199	238	131 139	72 77	135 67	107 112	104	109
1932-33	1,655	779	302	231	148	78	81	111	91	65
1933-34		775	156	360	159	67	63	110	133 100	67 87
1934-35 7	1, 444	711	119	1 300	147	72	64	110	129	41
	,		1 110		1 724	1 14	0.1		149	**

8 Exclusive of Russian Poland, Lithuania, parts of present Latvia and the Ukraine, and 2 provinces of Transcaucasia.

Transcaucasia.

*Beginning this year, estimates within present boundaries of the Union of Soviet Socialist Republics excluding Turkestan, Transcaucasia, and the Far East, which regions in 1924-25 produced 20,897,000 bushels.

*Post-war boundaries beginning this year, and therefore not comparable with earlier years.

*Beginning this year weighed bushels, those reported for the earlier years being measured bushels.

*Preliminary.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1934-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

Table 76.—Barley: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1933-34

Percentage	~ f w ~ ~ ~	A

Season														
iseason	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sea- son
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-80. 1930-81. 1931-32. 1933-34.	Per- cent 3. 2 4. 3 5. 8 6. 3 6. 1 7. 2 9. 0 4. 0 8. 6 10. 0	Per- cent 9. 9 14. 4 16. 1 9. 5 10. 4 17. 4 8. 8 16. 4 30. 5 19. 1	Per- cent 16. 2 19. 0 21. 2 18. 2 21. 8 25. 3 24. 9 21. 5 13. 8 25. 6	Per- cent 20. 1 18. 9 19. 8 18. 7 13. 4 16. 6 13. 8 7. 5 11. 7	Per- cent 16.6 11.8 8.8 12.3 12.1 9.2 10.4 10.5 6.6	Per- cent 8.4 6.9 7.0 7.7 7.1 5.7 6.0 6.2 4.7 3.9	Per- cent 5.9 5.4 5.3 6.9 4.7 5.5 2.8 3.4	Per- cent 5.2 4.3 5.3 4.9 3.6 4.5 4.5 2.6 3.4	Per- cent 3.8 3.5 3.2 4.5 3.7 3.0 3.5 4.1 3.1	Per- cent 3.4 3.8 4.5 3.2 3.0 3.3 4.4 6.6 3.6	Per- cent 2.2 2.4 3.7 2.3 2.7 2.7 3.1 4.2 7.6 3.1	Per- cent 2.7 3.6 3.8 2.1 2.4 2.9 3.1 3.4 5.3 4.0	Per- cent 2.4 2.6 3.1 1.9 2.3 1.7 1.7 2.5	Per- cent 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0

Bureau of Agricultural Economics.

i Includes all Russian territory reporting for the years shown.
Total Russian Empire exclusive of the 10 Vistula Provinces of Russian Poland and the Province of Batum in Transcaucasia.

TABLE 77. - Barley: Receipts graded by licensed inspectors, all inspection points. total of all classes under each grade, 1926-27 to 1933-34

Year begin-						Gr	ade					
ning July	Choice No. 1	No. 1	Choice No. 2	Special No. 2	No. 2	Choice No. 3	N o. 3	No. 4	No. 5	No. 1 feed	Sam- ple	Total
1926-27 ¹ 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33	Cars 251 262 329 223 261 142 530 596	Cars 481 2, 199 966 700 1, 483 568 764 959	Cars 107 90 100 50 76 35 50 130	Cars 2, 168 14, 913 13, 128 9, 966 11, 629 6, 014 13, 111 14, 394	Cars 2, 005 12, 151 20, 900 5, 800 7, 067 2, 410 1, 551 2, 670	Cars 421 274 392 315 249 130 152 239	Cars 4, 929 16, 299 25, 264 13, 907 12, 489 8, 958 8, 601 9, 693	Cars 4,026 6,197 20,129 7,269 6,305 2,743 1,639 1,620	Cars 266 183 135 102 127 146 80 100	Cars 916 2,875 6,502 3,602 2,034 865 301 805	Cars 15, 063 10, 923 11, 021 5, 124 1, 927 873 4, 817 2, 765	Cars 30, 633 66, 366 98, 866 47, 058 43, 647 22, 884 31, 596 33, 971

¹ Barley grades became effective Aug. 24, 1926.

Bureau of Agricultural Economics.

Table 78.—Barley: Commercial stocks, 1926-27 to 1934-35 DOMESTIC BARLEY IN IINITED STATES I

		DOM	IESTI(<i>7</i> DA.I.	<i>1</i> 11111111111111111111111111111111111	14 0147	TED	JERLI	<u> </u>			
Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000
	bushels	bushels	bushels	bushels	bushels	bushels	bushels	hushels)	bushels	bushels	bushels	bushels
1926-27						7, 097 4, 825	6,664	6.116	5, 339	3,675	2.513	2,720
1927-28	3, 108	5,041	6, 549	5, 957	5, 769	4,825	4,419	4, 273	4,588	3,890	2.410	2,801
1928-29	3, 467	9, 318	10, 681	11,067	11,744	10,926	11,985	11, 399	9,998	8,412	7,373	6,861
1929-30	8,803	12,894	12, 563 16, 084	12, 721 15, 018	11,760	11,866	10, 961	10, 415	9,726	8, 137	6,843	6, 366
1930-31	6,746	10, 945	16, 084	15, 018	14, 637	13, 987	14, 261	12, 279	9,464	7,319	6, 232	6,826
1931-32	6, 568	7,093	7, 211 8, 976	7,355 9,380	7, 124	6, 164	5,710		4, 179	3,732	2,848	2,793
1932-33	3, 440	6, 651	8, 976	9,380	9,862		10, 415		9,848	9,599		13, 417
1933-34	14, 587	17,975	19, 330	20, 176			17, 236	16, 123	14, 535	13, 010	11,322	10, 633
1934-35	9,945	13, 264	17,744	17, 531	19, 164							
		UN	ITED	STAT	ES BA	RLEY	IN CA	NADA	. 3			
1926-27						272	300	64	70	59	0	12
1927-28	5	66	665	344	152	40	42		25	9	1	13 20
1928-29	Ĭŏ	767	4, 171	5, 599	2,319		302		170	81	92	659
1929-30	279	246	1.341	1,749	955		937	938	936	993	963	937
1930-31	797	652	580	444	371		309		264	243	68	45
1931-32	45	24	24	24	24		25	25	25	25	77	45 6
1932-33	l ī	130	114	111	21		21		21	21	21	21
1933-34	ĪŌ		0	0	0	0	C		0	0	0	0
1934-35	l ŏ		Ŏ	ĺõ	Ō			L	-	L		٠
	<u> </u>	<u> </u>	CANA	DIAN	BARI	EY IN	CAN	ADA 8	1	100000	1	
1000 07	1	·	CANA	DIAN	BARI			-	110 210	1 0 270	1 0 000	1 0 005
1926-27					L	11, 082	9, 618	10, 218	10, 513	6,378	3, 830	3, 335
1927-28	2, 447	1,000	3, 574	6, 162	7, 231	11, 082 7, 972	9, 618	10, 218	8,623	8 218	4.312	2,895
1927-28 1928-29	1.452	1,356	3, 574 9, 010	6, 162 14, 134	7, 231 13, 419	11, 082 7, 972 16, 926	9, 618 8, 342 16, 393	10, 218 8, 548 17, 488	8,623	8 218	4, 312 11, 003	2,895 8,664
1927-28 1928-29 1929-30	1, 452 6, 997	1,356	3, 574 9, 010	6, 162 14, 134 22, 701	7, 231 13, 419 25, 027	11, 082 7, 972 16, 926 26, 495	9, 618 8, 342 16, 393 25, 989	10, 218 8, 548 17, 488 24, 685	8,623	8 218	4, 312 11, 003 20, 827	2,895 8,664 20,065
1927-28	1, 452 6, 997 18, 031	1,356	3, 574 9, 010	6, 162 14, 134 22, 701	7, 231 13, 419 25, 027 30, 048	11, 082 7, 972 16, 926 26, 495 30, 021	9, 618 8, 342 16, 393 25, 989 29, 162	10, 218 8, 548 17, 488 24, 685 28, 259	8, 623 18, 317 23, 422 26, 798	8, 218 13, 305 21, 507 23, 053	4, 312 11, 003 20, 827 14, 886	2,895 8,664 20,065 11,158
1927-28	1, 452 6, 997 18, 031 10, 142	1,356 8,285 20,035 8,468	3, 574 9, 010 18, 101 28, 459	6, 162 14, 134 22, 701 31, 047 11, 270	7, 231 13, 419 25, 027 30, 048 9, 633	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970	9, 618 8, 342 16, 393 25, 989 29, 162 9, 878	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631	8, 623 18, 317 23, 422 26, 798 9, 620	8, 218 13, 305 21, 507 23, 053 7, 949	4, 312 11, 003 20, 827 14, 886 6, 160	2, 895 8, 664 20, 065 11, 158 4, 344
1927-28	1, 452 6, 997 18, 031 10, 142 3, 672	1, 356 8, 285 20, 035 8, 468 3, 293	3, 574 9, 010 18, 101 28, 459	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784	9, 618 8, 342 16, 393 25, 989 29, 162 9, 878 6, 776	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281	2, 895 8, 664 20, 065 11, 158 4, 344 6, 966
1927-28	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605	9, 618 8, 342 16, 393 25, 989 29, 162 9, 878 6, 776	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281	2,895 8,664 20,065 11,158 4,344 6,966
1927-28	1, 452 6, 997 18, 031 10, 142 3, 672	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605	9, 618 8, 342 16, 393 25, 989 29, 162 9, 878 6, 776 11, 048	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790 10, 536	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281	2,895 8,664 20,065 11,158 4,344 6,966
1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-85.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605	9, 618 8, 342 16, 393 25, 989 29, 162 9, 875 6, 776 11, 043	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790 10, 536	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576 9, 801	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211	2,895 8,664 20,065 11,158 4,344 6,966 9,060
1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1984-35.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 CAT	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BAI	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605	9, 618 8, 342 16, 393 25, 989 29, 162 9, 875 6, 776 11, 048	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808 STAT:	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790 10, 536	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576 9, 801	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211	2,895 8,664 20,065 11,158 4,344 6,966 9,060
1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OAN	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BAI	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613 RLEY	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 IN UN	9, 618 8, 342 16, 393 25, 983 29, 163 9, 878 6, 776 11, 045	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808	8, 623 18, 317 23, 422 28, 798 9, 620 6, 790 10, 536	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576 9, 801	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211	2,895 8,664 20,065 11,158 4,344 6,966 9,060
1927-28. 1928-29. 1929-30. 1929-30. 1930-31. 1931-82. 1932-33. 1933-34. 1934-35.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OAL	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BA1	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613 3. LE Y	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 IN UN	9, 618 8, 342 16, 393 25, 983 29, 163 9, 878 6, 776 11, 045	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808	8, 623 18, 317 23, 422 28, 798 9, 620 6, 790 10, 536	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576 9, 801	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211	2,895 8,664 20,065 11,158 4,344 6,966 9,060
1927-28. 1928-29. 1929-30. 1930-31. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. 1926-27. 1927-28. 1928-29.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OAT	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 946 13, 936 N BA1	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 863 11, 613 3 LE Y	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 1N UN 2, 945 3, 6, 210 2, 818	9, 618 8, 342 16, 393 25, 983 29, 163 9, 878 6, 776 11, 045	10, 218 8, 548 17, 488 24, 685 28, 259 9, 631 6, 679 10, 808	8, 623 18, 317 23, 422 26, 792 9, 620 6, 790 10, 536 ES 4	8, 218 13, 305 21, 507 23, 053 7, 949 6, 576 9, 801 2, 401 2, 52 2, 718	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211 975 483 3, 315 2, 376	2,895 8,664 20,065 11,158 4,344 6,966 9,060 175 278 2,110 2,376
1927-28. 1929-30. 1929-30. 1930-31. 1931-32. 1932-33. 1932-34. 1934-35. 1928-27. 1927-28. 1928-29. 1929-30. 1930-31.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OAN 27 249 1, 711 1, 300	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 946 13, 936 N BA1	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 863 11, 613 3 LEY	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 1N UN 2, 942 3 6, 210 2, 818 1, 328	9, 618 8, 342 16, 393 25, 988 29, 162 9, 875 6, 776 11, 045 1, 68 1, 68 1, 73 3, 000 1, 27	10, 218 8, 548 17, 488 24, 685 28, 259 10, 808 8TAT 3, 1, 677 1, 191 1, 3, 233 4, 1, 267 1, 191 1, 2, 292 4, 1, 267	8, 623 18, 317 23, 422 26, 790 9, 630 10, 536 10, 536 22, 2, 2, 258 32, 783 7, 754	8, 218 13, 305 21, 507 23, 557 7, 946 6, 576 9, 801 112 2, 401 112 2, 712 2, 712 2, 712 1, 764	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211 	2,895 8,664 20,065 11,158 4,344 6,966 9,060 175 278 2,110 2,376 163
1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-34. 1934-35. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049 19 409 2, 277 1, 839 119	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 CAT 1, 711 1, 300 3	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BAI	7, 231 13, 419 25, 027 30, 048 9, 632 11, 868 11, 613 3.LEY	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 LN UN 2, 942 3, 6, 210 2, 818 1, 342 2, 818 1, 322 1, 582	9, 618 8, 342 16, 393 25, 989 29, 162 9, 878 6, 776 11, 048 	10, 218 8, 548 17, 488 17, 488 24, 685 28, 259 10, 603 10, 808 31, 677 1, 191 13, 233 14, 23, 232 11, 25, 27 11, 15, 28	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790 10, 536 10, 536 10, 536 10, 536 10, 536 10, 536 10, 536 11, 475 11, 475 11, 475	8, 218 13, 305 21, 507 23, 053 7, 946 6, 576 9, 801 112 2, 522 2, 714 1, 272	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211 9, 211 9, 316 483 3, 316 2, 627 2,	2,895 8,664 20,065 11,158 4,344 6,966 9,060 2,78 2,110 2,376 163 57
1927-28. 1929-30. 1929-30. 1930-31. 1931-32. 1932-33. 1932-34. 1934-35. 1926-27. 1927-28. 1928-29. 1928-30. 1931-32. 1931-32.	1, 452 6, 997 18, 031 10, 142 7, 783 9, 049	1, 356 8, 285 20, 365 8, 468 3, 293 8, 917 9, 120 CAN 1,711 1,300	3, 574 9, 010 18, 101 28, 459 11, 334 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BA1	7, 231 13, 419 25, 022 30, 048 9, 633 6, 024 11, 868 11, 613 3. LE Y	11, 0822 7, 9722 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 1N UN 2, 942 3, 6, 210 4, 242 3, 6, 210 7, 2, 818 1, 322 1, 583	9, 618 8, 342 16, 393 25, 983 29, 162 9, 878 6, 776 11, 04f 1, 68 4, 73 3, 00 1, 274 1, 58	10, 218 8, 548 17, 488 24, 685 28, 259 6, 679 10, 308 STAT: 31, 677 11, 191 13, 233 14, 677 15, 13, 233 17, 155 17, 155 18, 18, 18, 18, 18, 18, 18, 18, 18, 18,	8, 622 18, 317 23, 422 26, 798 9, 620 10, 536 10, 536 2 2, 258 3 2, 781 7, 754 2 1, 473 0 1, 473	8, 218 13, 305 21, 507 23, 053 7, 946 6, 576 9, 801 112 2, 522 2, 718 1, 276 1, 276	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211 	2,895 8,664 20,065 11,158 4,344 6,966 9,060 175 278 2,110 2,376 163 163 175 0
1927-28, 1928-29, 1928-30, 1930-31, 1931-32, 1932-30, 1930-31, 1931-32, 1932-30, 1933-31, 1932-33, 1933-34, 1933-33, 1933-34, 193	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049 19 409 2, 277 1, 839 119	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OA1	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA	6, 162 14, 134 22, 701 31, 047 11, 270 5, 339 11, 940 13, 936 N BAI	7, 231 13, 419 25, 027 30, 048 9, 633 6, 024 11, 868 11, 613 3. LE Y	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 1N UN 2, 942 1, 942 1, 2, 1, 942 1, 2, 1, 942 1, 1, 2, 1, 942 1, 1, 2, 1, 942 1, 1, 583	9, 618 8, 342 16, 393 25, 983 29, 162 9, 878 6, 776 11, 04f 1, 68 4, 73 3, 00 1, 274 1, 58	10, 218 8, 548 17, 488 17, 488 24, 685 28, 259 10, 603 10, 808 31, 677 1, 191 13, 233 14, 23, 232 11, 25, 27 11, 15, 28	8, 623 18, 317 23, 422 26, 798 9, 620 6, 790 10, 536 10, 536 10, 536 10, 536 10, 536 10, 536 10, 536 11, 475 11, 475 11, 475	8, 218 13, 305 21, 507 23, 053 7, 946 6, 576 9, 801 112 2, 522 2, 718 1, 276 1, 276	4, 312 11, 003 20, 827 14, 886 6, 160 6, 281 9, 211 9, 211 9, 316 483 3, 316 2, 627 2,	2,895 8,664 20,065 11,158 4,344 6,966 9,060 175 278 2,110 2,376 163 57
1927-28. 1929-30. 1929-30. 1930-31. 1931-32. 1932-34. 1932-34. 1926-27. 1926-27. 1928-29. 1928-30. 1931-32.	1, 452 6, 997 18, 031 10, 142 3, 672 7, 783 9, 049 199 2, 277 1, 839 119	1, 356 8, 285 20, 035 8, 468 3, 293 8, 917 9, 120 OA1 1, 711 1, 300 3 6 6 1, 711 1, 300 255	3, 574 9, 010 18, 101 28, 459 11, 334 5, 723 10, 623 13, 140 VADIA 27, 1, 751 1, 654 898 4, 27 (412	6, 162 14, 134 22, 701 31, 047 11, 270 5, 338 11, 946 13, 936 N BAI	7, 231 13, 419 25, 027 30, 048 9, 632 6, 024 11, 863 11, 613 3. LE Y	11, 082 7, 972 16, 926 26, 495 30, 021 9, 970 6, 784 11, 605 1N UN 2, 942 6, 216 2, 818 1, 322 1, 583 6, 31 1, 583	9, 618 8, 342 16, 393 25, 983 29, 165 9, 878 6, 776 11, 048 11, 648 11, 689 14, 73 13, 000 11, 27 11, 58	10, 218 8, 548 17, 4885 24, 685 228, 239 9, 631 6, 679 10, 808 STAT. 3, 233 1, 677 1, 193 1, 3, 233 1, 233 1, 253 1, 253	8, 623 18, 317 23, 422 26, 799 9, 620 10, 536 7 6, 799 10, 536 7 7 6, 557 2, 2, 258 3, 2, 783 2, 783 2, 783 2, 1, 473	8, 218 13, 305 21, 507 23, 053 7, 946 6, 576 9, 801 112 2, 522 2, 714 1, 275 6, 576 1, 275 1,	4, 312 11, 032 20, 827 14, 886 6, 160 6, 281 9, 211 9, 211 975 2, 33 3, 315 2, 376 2, 627 2, 283	2,895 8,664 20,065 11,158 4,344 6,966 9,060 2,376 2,110 2,376 163 57 0

vessels or barges in harbors of lake and seaboard ports. Does not include barley in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of barley intended for local nse

mill stocks.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market

Includes United States barley in store at 15 Canadian points or affoat in vessels or barges in the harbors of lake and seaboard ports. Does not include barley in transit to Canadian ports.
 Includes practically all Canadian barley held within Canadian boundaries, exclusive of farm and certain

A Includes Canadian barley in store and afloat at 10 United States lake and seaboard ports but not Canadian barley in transit on lakes or canals.

news service.

Data for domestic and Canadian barley in United States are for stocks on the Saturday nearest the Ist day of the month; for United States and Canadian barley in Canada data are for stocks on the Friday nearest the 1st day of the month.

Table 79.—Barley: Supply and distribution in continental United States. 1926-27 to 1934-35

			Supp	oly			1	Distributio	n
Year beginning August	Produc- tion	Stocks on farms Aug. 1	Farm supply Aug. 1	Com- mercial stocks, Aug. 1 ¹	Total stocks Aug. 1	Total supply Aug. 1	Net ex- ports 2	Disap- pear- ance	Stocks end of year
1926-27 1927-28 1922-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 164,467 240,057 329,625 280,242 303,752 198,543 302,042 155,825 118,929	1,000 bushels 8,752 3,450 7,098 16,123 11,677 13,513 5,969 16,019	1,000 bushels 173, 219 243, 507 336, 723 296, 365 315, 429 212, 056 308, 011 171, 844	1,000 bushels 2,299 3,108 3,467 8,798 6,746 6,568 3,440 14,587	1,000 bushels 11,051 6,558 10,565 24,921 18,423 20,081 9,409 30,606	1,000 bushels 175,518 246,615 340,190 305,163 322,175 218,624 311,451 186,431	1,000 bushels 20,512 38,967 62,172 20,630 11,510 4,090 9,423 4,932	1,000 bushels 148,448 197,083 253,097 266,110 290,584 205,125 271,422	1,000 bushels 6, 558 10, 565 24, 921 18, 423 20, 081 9, 409 30, 606

Bureau of Agricultural Economics.

Table 80.—Barley: Average price per bushel received by producers, United States 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 73. 5 55. 3 71. 4 77. 6 55. 6 40. 0 30. 0 24. 6 47. 6 52. 6	Cents 67. 1 55. 0 69. 0 58. 9 55. 8 43. 6 28. 9 21. 1 40. 2 63. 5	Cenis 60.8 52.9 69.5 54.1 55.2 45.3 30.9 20.1 42.8 78.2	Cents 57. 6 54. 4 66. 8 55. 2 54. 7 41. 9 31. 6 18. 2 40. 7 75. 5	Cents 58. 0 56. 0 66. 8 54. 5 53. 8 38. 3 35. 5 20. 1 41. 6 75. 9	Cents 58. 4 56. 4 71. 5 55. 0 54. 6 38. 8 35. 7 19. 3 40. 6 79. 7	Cents 59. 5 58. 0 73. 6 56. 2 53. 9 36. 6 35. 7 18. 4 43. 7	Cents 56. 3 61. 3 75. 4 60. 5 52. 5 35. 3 35. 8 17. 9 44. 7	Cents 54. 6 62. 2 79. 4 60. 1 51. 4 34. 4 37. 2 18. 3 43. 7	Cents 54.8 64.1 81.3 58.0 51.7 35.2 37.1 23.4 42.5	Cents 55. 1 68. 4 84. 5 55. 3 50. 5 35. 5 33. 7 29. 9 42. 2	Cents 53. 7 76. 3 81. 7 52. 6 47. 5 32. 6 28. 7 28. 3 50. 9	Cents 61. 4 57. 9 68. 9 56. 8 53. 9 40. 4 32. 5 22. 0 43. 3 1 71. 0

¹ Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 90. Only monthly prices are comparable.

Table 81.—Barley, No. 2: Weighted average price per bushel of reported cash sales, Minneapolis, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Weight- ed aver- age
1925-26 1928-27 1 1927-22 1 1928-29 1 1929-30 2 1930-31 2 1931-32 2 1931-32 3 1933-34 2 1934-35 3	Cents 72 63 77 65 62 53 45 31 58 100	Cents 66 62 72 63 63 54 50 32 69 116	Cents 65 65 73 63 59 52 50 29 67 110	Cents 63 64 77 62 60 48 51 31 63 117	Cents 65 67 83 62 60 47 51 29 68 120	Cents 65 69 84 66 58 44 51 26 71	Cents 62 71 87 70 57 44 52 25 71	Cents 62 72 90 67 56 44 53 30 70	Cents 63 77 92 65 57 48 51 40 68	Cents 65 88 93 60 56 45 44 45 72	Cents 64 88 94 60 50 39 35 43 85	Cents 67 81 85 69 48 42 31 64 8 91	Cenis 67 71 84 65 59 47 48 39 70

¹ For August 1926, Bradstreet's visible supply.

² Includes barley, barley flour, and malt. Barrel of flour calculated as equal to 9 bushels of grain, and 1.1 bushels of malt equal to 1 bushel of grain.

No. 2 Barley, including Special No. 2.
 Special No. 2 Barley, August 1929 to June 1934.
 No. 2 Malting Barley, July 1934 to end of table.

Bureau of Agricultural Economics; computed by weighting selling prices by number of car lots sold, as reported in Minneapolis Daily Market Record.

Prices 1909-10 to 1924-25 appear in 1932 Yearbook, table 89.

Table 82.—Barley, excluding flour and malt: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

				Y	ear begin	ning Jul	У			
Country	Average to 19		1930)-31	1931	-32	1932	? - 33	1933-	-34 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EX- PORTING COUNTRIES United States Rumania Canada Union of Soviet Socialist Republics	30, 308	1,000 bushels 0 0 14	1,000 bushels 10, 302 74, 095 16, 603	1	1,000 bushels 5,084 332,767 14,449	8 0 2	9, 155 323, 214 6, 750	1	1,000 bushels 5,935 331,734 1,547	1,000 bushels 230 89 2
Socialist Republics Argentina. Poland. Czechoslovakia. Algeria. Tunis. Chile. Hungary. British India. Bulgaria. Yugoslavia 5 Spain. Sweden. Egypt.	9, 355 7, 120 5, 301 4, 701 4, 291 2, 936 2, 611	0 46 900 366 756 4477 0 3 3 	49, 831 11, 612 6, 091 6, 252 3, 076 621 1, 166 1, 231 261 3, 307 3, 467 160 335 4	0 0 2 894 894 0 7 5 0 306 0 41 239	37, 544 13, 822 6, 550 4, 121 1, 287 1, 013 1, 079 108 1, 793 892 3, 453 62 44 41 3	0 0 0 4 5,656 1,158 0 81 0 0 130 0 5	16, 555 17, 431 7, 355 7, 869 80, 253 595 -2, 870 11 276 3, 178 27 118 3 230	0 0 2 4,405 80 0 41 0 11 11 0 6-2	25, 898 24, 080 6, 968 2, 331 2, 345 3, 744 2, 499 7 1, 176 3 2, 806 94 9 380	0 0 0 1,041 1,223 0 0 3 0 6 6 0 0
Total		2, 724	188, 419	2, 287	124, 112	7, 697	102, 196	4, 543	112, 305	2, 318
PRINCIPAL IM- PORTING COUNTRIES										
Garmany United Kingdom Netherlands Belgium Denmark Switzerland Austria France Norway Irish Free State Greece Estonia Italy	790 258 2,891 0 7 134 1,044 1,044 0 430 0	83, 542 32, 134 14, 460 13, 586 3, 494 3, 306 3, 163 2, 830 1, 382 885 593 244 209	1, 232 2, 200 2, 569 1 36 87 0 42 0 0	36, 660 37, 827 30, 204 21, 566 30, 974 5, 770 4, 644 15, 100 2, 293 595 171 34 1, 206	38 563 3, 427 990 2 3 34 0 52 0 0	34, 923 30, 797 20, 030 20, 327 8, 200 6, 383 4, 350 19, 515 1, 737 996 355 0 1, 382	220 2, 985 931 2 3 9 0	8, 536 26, 750 17, 798 19, 194 4, 881 9, 031 3, 872 16, 705 345 645 43 0 1, 224	73 1,365 2,005 1 5 1 0 0	15, 717 42, 595 23, 969 18, 410 3, 013 4, 756 5, 434 8, 261 447 7 0 2, 245
Total	6, 212	159, 828	6, 590	187, 044	5, 109	148, 995	4, 159	109,024	3, 454	125, 467

Bureau of Agricultural Economics; official sources except where otherwise noted.

¹ Preliminary.
2 Imports for consumption.
3 Monthly Crop Report and Agricultural Statistics, International Institute of Agriculture.
4 3-year average.
5 Calendar year.

Excess of reexports over imports.

Table 83.—Flaxseed: Acreage, production, value, foreign trade, and net supply. United States, 1909-34

							,			
	Acre-	Aver-	Pro-	Price per bushel	raim	Price per bushel of No. 1 flax- seed at	seed,	ed, included, in to year be sember 3	erms of	NT.4
Year	age har- vested	yield per acre	duc- tion	received by pro- ducers Dec. 11	basis Dec. 1 price	Minne- apolis, year begin- ning Aug. 1 2	Im- ports	Ex- ports, domes- tic and foreign	Net im- ports	Net supply
1909	1,000 acres 2,083	Bushels 9.4	1,000 bushels 19,513	Cents	1,000 dollars	Cents	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
1909 1910 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1919 1920 1922 1922 1924 1924 1925 1926 1927	2,083 2,4757 2,757 2,851 1,387 1,484 1,910 1,281 1,143 1,113 2,485 3,535 2,736 2,736 2,736 2,736	9.5.7.0.8.8.4.1.7.6.0.5.2.6.1.5.2.2.8.8.4.8.1.3.6.5.6.6.1.5.2.2.8.8.3.7.6.9.7.9.8.8.8.7.6.9.7.9.8.8.8.7.6.9.7.9.8.8.8.7.6.9.7.9.8.8.8.7.6.9.7.9.8.8.8.7.8.9.7.8.9.7.8.9.7.8.9.7.8.9.7.9.9.9.7.9.9.9.9	10, 699 12, 718 19, 370 11, 853 11, 853 11, 264 9, 164 18, 369 6, 677 10, 900 8, 107 10, 553 22, 237 12, 553 22, 237 22, 237 22, 237 25, 183 19, 146	152. 8 231. 7 182. 1 114. 7 119. 9 128. 0 248. 6 296. 8 340. 1 442. 1 232. 8 165. 4 207. 6 212. 5 217. 9 226. 4 203. 2 192. 5	30, 093 29, 472 35, 272 32, 202 21, 399 17, 318 24, 410 35, 541 27, 182 25, 375 13, 411 21, 836 35, 192 68, 055 50, 582 37, 682 37, 683 37, 118	197 250 218 142 150 170 200 280 370 407 473 220 216 259 244 263 253 225 221 229	6, 074 12, 010 7, 848 3, 845 9, 772 12, 729 14, 441 10, 946 14, 046 14, 046 23, 389 22, 009 19, 557 12, 849 20, 858 24, 157 23, 611	152 73 126 897 216 5711 313 807 467 482 219 149 161 145 124 148 112 120 106	5, 922 11, 987 7, 722 2, 948 9, 556 12, 158 10, 439 113, 575 8, 748 26, 016 15, 955 23, 240 28, 848 19, 412 12, 725 20, 710 24, 043 18, 057 23, 505	25, 621 24, 655 27, 092 31, 021 27, 409 25, 907 28, 158 24, 735 22, 739 22, 117 32, 786 31, 347 39, 368 35, 975 43, 942 43, 244 43, 244 44, 645
1929	3, 047	5. 2 5. 7 4. 9 5. 2 5. 4	15, 910 21, 287 11, 798 11, 671 6, 947 5, 253	281. 2 161. 0 116. 6 88. 1 162. 6 172. 7	44, 733 34, 278 13, 758 10, 280 11, 296 9, 070	811 176 136 118 187	18, 537 9, 938 10, 949 9, 414 16, 806	109 69 46 39 38	18, 428 9, 869 10, 903 9, 375 16, 768	34, 338 31, 156 22, 701 21, 046 23, 715

5 Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns. See 1927 Yearbook, table 89, for data for earlier years.

¹ Beginning with 1919 prices are weighted average prices for crop-marketing season.
² The figures shown, 1909-20, are averages of daily closing prices compiled from annual reports of the Minneapolis Chamber of Commerce; beginning 1921 averages of daily prices weighted by car-lot sales, compiled from Minneapolis Daily Market Record.
² Compiled from Commerce and Navigation of the United States, 1909-17; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States June, July, and Angust issues, 1919-28, January, June, July, and Angust issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce. 1 bushel of flaxseed weighs 56 pounds; 1 bushel of seed yields approximately 2½ gallons of oil; and 1 gallon of oil weighs 7½ pounds.
⁴ Total imports minus total exports (domestic plus foreign). Beginning 1933-34 imports for consumption minus domestic exports. (See introductory text.)
⁵ Preliminary.

Table 84.—Flaxseed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acres	ige harv	rested	Yie	eld per s	acre	P	roductio	on	Price f	or crop
State	A ver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	1933	19341
Wisconsin Minnesota Iowa Missouri. North Dakota South Dakota Nebraska Kansas Montana Wyoming California	1,000 acres 8 720 19 3 1,296 530 14 36 274 16	1,000 acres 4 682 28 2 462 2 36 64 2	1,000 acres 5 580 21 2 288 17 (8) 50 19	Bu-shels 11.8 9.4 9.9 25.8 6.6 6.5 9.5 5.8	Bu- shels 10.0 6.4 6.5 5.5 6.0 6.2 3.0 2.5	Bu- shels 11.0 6.0 6.5 3.5 2.5 4.0 2.0 22.0	1,000 bushels 92 6,241 184 15 7,351 3,065 91 215 1,329 81	1,000 bushels 40 4,365 182 11 1,805 12 223 192 5	1,000 bushels 55 3,480 136 7 938 42 275 76 2 242	Cents 150 186 162 155 159 145 148 144 138	Cents 163 176 176 176 155 167 169
United States	2, 915	1,328	974	7.3	5. 2	5.4	18, 664	6,947	5, 253	162. 6	172.7

¹ Preliminary.

Table 85.—Flaxseed: Production, world and selected countries, 1919-20 to 1934-35

	World, includ-	North- ern Hemi-	Europe, includ-			S	elected c	ountries			
Crop year	ing Union of Soviet Social- ist Re- publics ¹	sphere, includ- ing Union of Soviet Social- ist Re- publics	ing Union of Soviet Social- ist Re- publics	Argen- tina	Union of Soviet Social- ist Re- publics	United States	India	Can- ada	Poland	Lithu- ania ³	Uru- guay
1919-20	1,000 bushels 86,465 113,534 75,121 98,745 125,988 131,221 159,123 158,194 150,000 122,764 155,100 166,000 133,000 121,300	1,000 bushels 36, 877 52, 361 38, 427 50, 236 66, 797 84, 486 71, 080 76, 715 68, 607 71, 108 79, 376 71, 108 68, 000 61, 500	1,000 bushels 13,425 14,894 14,428 16,813 19,664 23,982 32,391 22,861 29,146 30,777 37,815 38,927 36,020 35,837	1,000 bushels 49,890 60,006 47,577 58,005 45,084 75,113 80,783 82,672 78,377 50,004 70,284 89,066 56,690 72,043	1,000 bushels * 8,000 9,204 9,702 111,043 13,379 16,960 23,991 20,877 21,814 23,690 23,690 29,957 33,060 29,957 33,060 33,0707	1,000 bushels 6,770 10,900 8,10,520 16,563 31,237 22,337 18,537 24,183 19,140 21,287 11,798 11,796 6,947 5,253	1,000 bushels 9,400 16,780 10,800 11,320 12,320 16,080 16,240 13,920 15,200 15,080 16,240 15,080	1,000 bushels 5,473 7,998 4,110 9,695 6,237 6,237 6,237 6,237 6,237 2,485 2,060 4,339 2,471 632 910	1,000 bushels 556 687 887 1,816 2,129 1,872 2,250 2,472 2,790 2,472 2,173 3,335 1,941 1,640 1,774	1,000 bushels 827 1,011 1,056 1,332 1,574 1,405 1,718 1,532 1,033 1,015	1,000 bushels 982 966 519 719 1,178 1,542 2,030 1,970 1,954 2,030 3,228 5,556 4,377 1,475 2,376 4,747

¹ Excludes a few minor producing countries for which no statistics are available and which do not enter into world trade.

Flax and hemp.

Estimate of Bureau of Agricultural Economics.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

Production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere, which immediately follow; thus, for 1924-35 the crop harvested in the Northern Hemisphere countries in 1934 is combined with the Southern Hemisphere harvest which begins late in 1934 and ends early in 1935.

² 8-year average. ³ Less than 500 acres.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

Table 86.—Flax: Acreage and production in specified countries, average 1921–22 to 1925–26, annual 1931–32 to 1934–35

				•		•	•							•	
		¥	Астярр				Seed pr	Seed production				Fiber	Fiber production	g	
Country	Average 1921–22 to 1926–28	1931-32	1982-83	1933-34	1934-35 1	Aver- age 1921-22 to to 1925-26	1931-32 1932-33		1933-34	1934- 35 1	A verage 1921-22 to 1925-26	1931-32	1932-33	1933-24	1934-361
North America: Canada. United States.	Acres 769, 552 - 2, 165, 600	Acres 627, 430 2, 416, 000	Acres 461, 500 1, 975, 000	Acres 243, 600 1, 328, 000	Acres 227, 000 974, 000	1,000 bushels 6,438 17,763	1,000 ushels 2,465 11,798	1,000 bushels 1 2,719 11,671	1,000 bushels b 632 6,947	1,000 bushels 910 5,253	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Total North America	- 2,935,152	3, 043, 430	2, 436, 500	1, 571, 600	1, 201, 000	24, 191	14, 263	14, 390	7, 579	6, 163	-	-			
Burope: United Kingdom: England and Wales Northern Ireland Irish Free State Netherlands Begitum Begitum Begitum Branch Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Germany Liahy Germand Lithuand Lithuand Lithuand Lithuand Lithuand Feland Lithuand Feland Union of Soviet Socialist Republics Publics Publics Fortal European countries reporting all years, including	2,789,900	3, 186 7, 440 1, 1825 1, 1825 1, 1825 1, 1825 1, 1836 1, 1836	1, 311 6,603 1, 252 1, 252 1, 252 1, 253 1, 148 1,	9, 784 12, 000 12, 000 13, 000 13, 000 14, 000 14, 000 11, 000	15, 684 17, 000 11, 00	23.0 23.0 23.0 23.0 23.0 33.0 23.0 34.0 24.0 34.0 34.0 34.0 34.0 34.0 34.0 34.0 3	33. 38. 38. 38. 38. 38. 38. 38. 38. 38.	202 202 202 202 202 202 30 30 30 30 30 30 30 30 30 30 30 30 30	239 239 1125 1177 1177 202 202 202 202 203 203 203 203 203 203	270 270 270 10 10 10 10 10 10 10 10 10 10 10 10 10	2, 686.2 2, 686.2 2, 686.2 2, 12.8 3,	3, 091 3, 091 3, 091 3, 091 3, 091 3, 091 3, 091 3, 092 3, 093 3, 093	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2, 28 887 2, 28 888 3, 3, 37 2, 2, 28 3, 3, 37 3, 3, 38 3, 3, 3, 38 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3	4,6,322 4,6,325 4,6,325 4,6,630 4,6,630 1,1,73 1,73
Union of Soviet Societist Republics	8, 821, 520		8, 583, 662 8, 429, 174	7, 478, 123	6, 498, 942	3, 667	2, 707	1,740	2, 149	2, 767	262, 977	173,867	114, 700	170, 684	211, 245
										_					1

3, 192		214, 437				1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	173, 178 214, 437	
2, 494		173, 178				1		
1, 516	38, 649 26, 772	116, 201	1, 581, 400 1, 377, 300 1, 589, 250				116, 201	1, 377, 300
1, 178		175,045	1, 581, 400			1	175, 045	1, 581, 400
2,090	61, 242	285, 067	1, 144, 200				265, 067	1, 144, 200 1, 581, 400 1, 377, 300 1, 589, 250
	15,080	26, 182 24, 321			2, 876 4, 747 56, 690 72, 043 25	76, 790	85, 788 101, 059	1
	16, 240	26, 182	61, 500		1	59, 566	85, 788	121,300
868	16, 640 87	32, 988	68,000		1, 475 62, 006 5	63, 481	96, 469	120,000 166,000 133,000 121,300
932 47 36	15,080 12,080 123 28	32, 258	71, 100		4, 837 89, 067 26	93, 904	99, 066 126, 162	166,000
363	17, 624	45, 503	64, 700		1, 198 52, 365 121	53, 563		120,000
31,000	85, 000 35, 000 3, 299, 000 3, 257, 000	10, 016, 897 14, 796, 392 14, 253, 806 12, 467, 195 11, 027, 942	1		5, 224, 787 8, 178, 000 5, 654, 809 6, 853, 393 6, 918, 800 8, 603, 85, 85, 800 1, 441	6, 341, 036 8, 620, 765 6, 091, 984 7, 112, 818 7, 371, 671	15, 387, 933[23, 417, 167] 20, 245, 790 [19, 680, 013] 18, 389, 513	
30,000	3, 299, 000	12, 467, 195	12, 500, 000		259, 425 6, 853, 393 1, 441	7, 112, 818	19, 580, 013	20, 150, 000
53, 487 5, 560 2, 346	23, 299 3, 309, 000 33, 685 862	14, 263, 806	14, 300, 000		337, 176 5, 654, 800 333	5, 991, 984	20, 245, 790	20, 700, 000
89,000 7,413 2,098	88, 612 3, 009, 000 28, 1150 2, 661	14, 796, 392	15, 000, 000		442, 765 8, 178, 000 1, 765	8, 620, 765	23, 417, 167	23, 650, 000
40,844 5,996 3,181	3, 216, 200 49, 911 3, 386	10, 016, 897	10, 150, 000 15, 000, 000 14, 300, 000 12, 500, 000		116, 279 6, 224, 767 8, 693		15, 357, 933	15, 502, 000
North Africa: Morocoo- Tunis Egypt- Asia:	Turkey 18,000 3,286,000 3,286,000 3,286,000 3,286,000 3,287,000 3,	Total Northern Hemisphere countries reporting all years	Estimated Northern Hemisphere total	SOUTHERN HEMISPHERE	Urugusy Argentina • New Zealand	Total Southern Hemisphere countries reporting all years	Total Northern and South- ern Hemisphere countries reporting all years	Estimated world total 7 15, 502, 000 23, 650, 000 20, 700, 000 20, 150, 000

1 Freilminary,
1 Fraction horm,
2 4-year average.
4 2-year average.
4 2-year average.
5 4-year average.
6 2-year average.
6 2-year average.
7 Where obstances the farritory have occurred averages are estimates for tearitory within present boundary.
6 4-creage figures are for area sown; figures of area harvested are not available for all years, but over a 16-year period the harvested area averaged 10 percent below the sown area.
7 Excludes a few minor producing countries for which no statistics are available and which do not enter into world trade.

Bursan of Agricultural Economics; official sources and International Institute of Agriculture.

Both access and production figures refer to the year of harvest. Harvests of the Northern Hemisphere are combined with those of the Southern Hemisphere which his way harvested in the Northern Hemisphere countries in 1834 is combined with the Southern Hemisphere his paid onds early in 1886.

Table 87.—Flaxseed: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1924-25 to 1983-34

77					Percei	ntage o	f recei	pts du	ring—				
Year	July¹	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Year
1924-25 1925-26 1926-27 1927-23 1922-29 1929-30 1930-31 1931-32 1932-33 1933-34	Pct5 1.1 1.4 1.0 1.1 1.9 2.2 6.4 3.7 3.0	Pct. 5.3 11.1 12.0 6.1 7.2 19.9 21.3 31.0 26.8 35.5	Pct. 23. 0 34. 3 25. 5 32. 9 31. 1 35. 6 31. 4 26. 9 28. 2 29. 9	Pct. 34. 5 23. 5 32. 5 33. 4 35. 3 23. 9 18. 5 17. 0 15. 1 11. 1	Pcl. 17.8 12.4 11.2 10.5 11.6 9.1 9.0 6.9 4.5	Pct. 7 6. 6 6 . 3 5 . 3 3 4 . 8 8 7 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3	Pct. 3.8 2.7 2.4 3.0 2.1 1.3 6 2.0 3.3 1	Pct. 2.7 2.0 2.3 1.9 1.2 1.1 2.5 2.0 1.6 1.8	Pct. 1.8 1.8 1.7 1.9 1.4 1.0 2.0 1.4 1.4 2.0	Pct. 1.4 1.5 .9 1.2 1.0 .8 2.3 1.4 2.0 1.8	Pct. 1.2 1.9 1.7 1.5 1.0 2.1 1.8 2.9 2.7	Pct. 1.3 2.1 2.1 1.1 1.2 1.1 1.8 1.4 2.3	Pct. 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0

¹ July marketings are composed of receipts of the current year's crop from Kansas, Nebraska, Iowa, and other States in the southern part of the flax belt and receipts of the previous year's crop from the Dakotas, Minnesota, and Montana.

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 96.

Table 88.—Flaxseed: Receipts at Minneapolis, by months, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Total
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1931-32. 1932-33. 1933-34. 1934-35.	1,000 bu. 1,094 830 441 652 1,249 2,436 2,110 1,994 1,024 633	1,000 bu. 3,331 1,539 4,465 3,454 2,939 2,295 1,476 1,255 1,120 1,169	1,000 bu. 2,745 2,905 3,894 3,690 1,759 1,213 840 696 335 875	1,000 bu. 1,107 1,103 1,065 1,278 624 912 321 216 202 246	1,000 bu. 722 669 490 601 403 472 264 168 119 242	1,000 bu. 375 415 716 373 180 401 161 329 141	1,000 bu. 276 318 495 328 116 368 98 72 92	1,000 bu. 320 273 471 328 133 449 97 85 119	1,000 bu. 357 169 311 255 142 359 103 134 137	1,000 bu. 431 257 439 244 390 355 164 352 273	1,000 bu. 360 277 457 330 313 511 168 307 256	1,000 bu. 294 145 143 180 162 154 66 112	1,000 bu. 11,412 8,900 13,387 11,713 8,410 9,925 5,868 5,720 3,918

Bureau of Agricultural Economics; compiled from annual reports of the Minneapolis Chamber of Commerce. Data for earlier years in 1928 Yearbook, table 98.

Table 89.—Flaxseed: Commercial stocks, 1926-27 to 1934-35
DOMESTIC FLAXSEED IN UNITED STATES 1

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 1,445 781 434 433 802 901 960 646	1,000 bushels 909 596 370 314 672 763 875 623	1,000 bushels 584 317 159 467 745 1,596 1,117 672	1,000 bushels 1,583 704 924 2,330 1,383 2,668 1,834 1,008	1,000 bushels 5,353 2,721 1,179 2,202 1,920 2,095 1,482 1,218	1,000 bushels 4,703 1,343 610 1,431 1,585 1,150 984 1,210	1,000 bushels 2,684 4,247 1,397 985 1,371 873 1,212 1,039	1,000 bushels 2, 328 3, 409 1, 142 867 1, 357 639 1, 211 963	1,000 bushels 2,089 2,816 780 740 1,273 492 1,219 983	1,000 bushels 2,014 2,178 681 696 1,184 555 1,140 980	1,000 bushels 1,834 1,691 547 589 972 686 1,242 793	1,000 bushels 1,429 882 398 519 784 874 909 646

¹ Includes domestic flaxseed in store in public and private elevators in 41 markets and flaxseed afloat in vessels or barges in harbors of lake and seaboard ports. Does not include flaxseed in transit either by rail or water, stocks in mills, or mill elevators attached to mills, or private stocks of flaxseed intended for local use.

Table 89.—Flaxseed: Commercial stocks, 1926-27 to 1934-35.—Continued

CANADIAN FLAXSEED IN CANADA:

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	1,000 bushels 2,105 1,770 1,619 471 975 1,347 1,140 474	1,000 bushels 1,972 1,168 444 434 742 1,280 1,050 450	1,000 bushels 1,535 534 352 449 758 1,264 1,013 469	1,000 bushels 1,403 500 780 1,300 883 1,362 984 503	1,000 bushels 1,899 1,327 1,230 1,904 1,588 1,437 904 627	1,000 bushels 2,747 1,319 1,275 2,404 1,549 1,581 699 576	1,000 bushels 3, 188 2, 975 1, 528 1, 089 2, 134 1, 467 1, 431 603	1,000 bushels 3,319 3,071 1,381 1,049 2,080 1,396 1,482 604	1,000 bushels 3,427 3,069 1,328 982 2,104 1,363 1,460 595	1,000 bushels 3,463 2,938 1,293 973 2,059 1,383 1,358 565	1,000 bushels 2,947 2,787 1,080 849 1,756 1,267 1,393 541	1,000 bushels 2,577 2,107 932 693 1,253 1,404 1,088 507

² Includes pratically all Canadian flaxseed held within Canadian boundaries, exclusive of farm and certain mill stocks.

Table 90.—Flaxseed: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Weight- ed average
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 229. 5 215. 7 203. 7 181. 7 259. 5 191. 9 120. 4 79. 3 163. 0 176. 7	227. 9 211. 3 197. 1 181. 6 285. 4 168. 1 113. 1 88. 1 164. 4	197. 5 191. 2 198. 1 300. 5 152. 2 106. 5 87. 7 149. 0	228. 1 195. 5 184. 2 198. 1 285. 1 133. 6 121. 9 87. 1	232. 1 196. 4 185. 3 205. 4 287. 7 137. 6 118. 7 82. 8 151. 1	224. 5 193. 0 188. 4 211. 1 279. 8 131. 7 116. 1 90. 8 161. 4	216. 4 195. 7 189. 9 218. 4 275. 0 126. 2 116. 0 87. 1	202. 9 195. 1 194. 8 219. 2 261. 5 130. 4 118. 7 88. 0	207. 0 196. 1 198. 4 216. 4 263. 7 128. 6 116. 1 94. 8	205. 4 205. 7 210. 5 214. 7 245. 9 129. 9 106. 7 118. 6	204. 7 209. 0 217. 0 245. 6 120. 1 86. 2 136. 3	208. 7 198. 4 195. 5 233. 2 192. 7 132. 6 80. 8 188. 8	281. 2 161. 0 116. 6 88. 1

¹ Preliminary.

Bureau of Agricultural Economics; based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 101. Only monthly prices are comparable.

Table 91.—Flaxseed, No 1: Weighted average price per bushel of reported cash sales, Minneapolis 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Weight- ed average
1925-26 1926-27 1927-23 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 254 238 222 205 279 200 141 101 188 205	Cents 259 233 221 209 323 190 137 113 188 198	Cents 258 221 213 228 332 180 132 113 180 190	Cents 256 222 213 235 324 165 146 106 177 186	Cents 261 224 215 239 322 161 143 109 177 199	Cents 250 223 224 245 308 157 141 116 190	Cents 243 225 227 255 305 156 140 110 189	Cents 232 222 233 249 292 158 140 113 182	Cents 234 224 236 245 292 157 135 128 182	Cents 230 234 246 245 268 155 121 143 191	Cents 233 225 238 248 271 148 105 172 191	Cents 244 223 221 276 232 164 98 205 190	Cents 253 225 221 229 311 176 136 118 187

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold, as reported in Minneapolis Daily Market Record.

Prices 1899–1900 to 1924–25 appear in 1932 Yearbook, table 100.

Bureau of Agricultural Economics; compiled from weekly reports to the grain, hay, and feed market news service.

news service.

Data for domestic flaxseed in United States are for stocks on the Saturday nearest the 1st day of the month; for Canadian flaxseed in Canada data are for stocks on the Friday nearest the 1st day of the month.

Table 92.—Flaxseed: International trade, average 1925-29, annual, 1930-33

									·	
					Calenda	r year				
Country		rage 5–29	19	30	19	31	19	932	198	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES Argentina British India Canada Uruguay Lithuania Latvia Morocco Eritrea ¹ China Estonia Rumania Tunis	2, 828 2, 084 811 644 363 188 117 86 56 47	1,000 bushels 0 763 568 0 0 560 0 0 31 9	1,000 bushels 46,047 10,455 1,397 3,116 792 423 318 37 23 99 78 25	1,000 bushels 0 736 809 0 0 304 0 0 0	1,000 bushels 74,022 4,500 1,045 5,236 439 188 671 19 170 7	1,000 bushels 1538 346 0 0 161 0 0 1 0	1,000 bushels 79, 823 3,088 367 3,087 304 96 533 53 88 2 207 59	1,000 bushels 0 574 455 0 0 136 0 0 0	1,000 bushels 54, 812 13, 897 615 237 135 104 545 1	1,000 bushels 0 773 150 0 0 188 0 0 0 50
Total	80, 365	1,931	62, 810	1,852	86, 696	1,047	87, 707	1, 173	70, 354	1, 161
FRINCIPAL IMPORT- ING COUNTRIES United States. Netherlands. Germany United Kingdom France. Belgium Italy. Sweden. Australia 3. Czechoslovakia. Denmark Spain. Norway. Poland Japan. Finland Hungary. Austria.	208 80 20 301 1 0 19 0 275 0 275	20, 540 13, 639 13, 602 13, 439 7, 368 4, 052 2, 380 1, 477 957 885 696 663 602 522 464 222 92	0 260 407 0 27 121 0 0 0 33 0 0 0 54 0 0 263 1	12, 662 10, 029 9, 274 8, 915 7, 499 2, 990 2, 091 1, 425 605 796 643 749 637 224 141 1188 16	0 88 25 0 30 366 0 0 0 12 0 0 13 1 0 75	14, 480 16, 524 13, 404 13, 517 10, 380 6, 611 2, 412 1, 884 555 1, 741 832 515 488 330 123 4	0 135 35 0 13 248 0 0 0 6 0 0 0 0 13 7	7, 919 17, 7572 14, 485 9, 290 6, 557 2, 702 1, 708 845 1, 426 922 721 485 263 135 53 18	0 79 51 0 11 122 0 0 0 4 4 0 0 0 3 0 0 12 2	13, 825 11, 630 14, 105 9, 829 10, 404 4, 915 2, 954 1, 384 542 735 511 842 156 54 15
Total	925	81,615	806	59, 151	610	83,864	460	83, 749	282	78, 303

Table 93.—Flaxseed crushed and linseed oil produced, United States, 1924–25 to 1933-34

		Flax	seed cru	shed			Oi	l produce	d	
Year	Octo- ber-De- cember	Janu- ary- March	April- June	July- Septem- ber	Total	October- Decem- ber	January March	April- June	July- Septem- ber	Total
1924-25 1925-26 1926-27 1928-29 1929-30 1930-31 1931-32 1932-34	1,000 bushels 11,530 11,798 11,085 12,699 11,191 9,947 7,391 7,112 4,998 6,760	1,000 bushels 12,516 10,651 11,037 11,885 10,839 7,966 6,571 5,393 4,365 5,156	1,000 bushels 9, 128 7, 767 8, 963 9, 608 9, 962 7, 205 3, 584 4, 268 5, 016	1,000 bushels 7,822 9,500 9,051 7,603 10,321 5,887 7,610 3,739 6,074 4,293	1,000 buskels 40,996 39,716 40,136 41,795 42,313 31,070 28,777 19,828 19,705 21,225	1,000 pounds 211, 954 217, 992 206, 496 238, 046 206, 273 182, 228 131, 257 130, 479 90, 987 133, 906	1,000 pounds 229,544 194,607 202,162 223,751 202,353 145,970 118,417 99,783 79,596 97,452	1,000 pounds 169, 980 144, 950 167, 232 179, 532 187, 019 130, 635 67, 296 79, 035 98, 026	1,000 pounds 146, 306 174, 057 169, 274 141, 889 191, 977 108, 236 141, 205 68, 503 113, 413 85, 038	1,000 pounds 757, 784 731, 606 745, 164 783, 218 787, 622 567, 297 521, 514 368, 061 363, 030 414, 422

¹ Preliminary.

Preliminary.
 International Yearbook of Agricultural Statistics.
 Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census, animal and vegetable fats and oils. Figures for 1919-20 to 1923-24 are in 1934 Yearbook, table 91.

Table 94.—Linseed oil, raw: Average car-lot price per gallon in barrels, New York, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 102 90 80 73 96 97 63 41 79	Cents 103 83 77 74 116 78 57 45 78	Cents 1 99 81 74 76 118 74 55 47 72 68	Cents 96 81 73 77 111 70 56 50 72 65	Cents 95 80 72 75 110 68 53 52 71 66	Cents 87 79 74 75 105 66 50 55 69	Cents 85 78 74 76 105 69 46 54 69	Cents 80 77 74 76 105 71 50 56 70	Cents 81 81 74 76 106 68 49 58 70	Cents 81 84 78 77 105 66 40 65 72	Cents 84 84 77 79 105 64 44 70 75	Cents 89 80 75 92 104 68 42 81 73	Cents 90 82 75 77 107 72 51 56 72

¹ Beginning October 1925, prices are quoted on pound basis and have been converted to price per gallon by multiplying by 7.5.

Table 95.—Linseed oil: International trade, average 1925-29, annual 1930-33

								<u>.</u>		
					Calend	ar year				
Country	Ave 1925		19	30	19	31	19	32	193	13 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
United Kingdom Belgium Sweden	23, 503 1, 267	1,000 pounds 833 47,546 2,303 668	1,000 pounds 172, 024 35, 157 29, 324 1, 435	1,000 pounds 943 96,051 1,237 312	1,000 pounds 161, 433 32, 258 22, 743 1, 952	1,000 pounds 952 83,005 1,518 469	126, 030 30, 222 34, 744 1, 228	1,000 pounds 455 56,965 1,353 684	1,000 pounds 105, 115 24, 127 20, 765 626	1,000 pounds 481 16, 204 1, 105 220
Total	232, 306	51, 350	237, 940	98, 543	218, 386	85, 944	192, 224	59, 457	150, 633	18, 010
ING COUNTRIES Germany Switzerland Brazil Austria France United States Finland Netherlands Indies Australia Egypt Union of South	27 0 459 4,378 2,351 0 0 25	43, 213 13, 286 9, 558 8, 997 8, 138 7, 946 5, 380 5, 161 4, 968 4, 935	9, 288 49 0 165 11, 278 1, 592 0 0 24 0	33, 931 12, 981 5, 758 9, 104 5, 480 2, 125 5, 843 5, 448 1, 643 1, 555	14, 680 38 0 90 9, 608 1, 094 0 27 2	15, 517 19, 474 4, 214 12, 563 6, 423 235 6, 648 3, 900 2, 277 697	6,700 3 0 49 9,555 842 0 0 27	35, 301 19, 667 2, 909 9, 200 3, 172 25 4, 889 2, 880 3, 024 835	3, 047 39 0 277 9, 592 828 0 0	25, 780 17, 399 8, 646 1, 090 11, 257 5, 102 1, 878
Africa Hungary New Zealand Italy Norway Chile Irish Free State British India Denmark British Malaya Bulgaria Yugoslavia Czechoslovakia China Philippine Islands Canada Argentina Tunis Greece	0 12 2 403 54 4 0 728 419 126 0 0 52 257 0 49 265 0 0 55	4,770 4,246 3,784 3,314 2,712 2,309 2,081 1,550 1,484 1,390 1,242 1,210 819 743 668 419	0 989 0 0 244 64 222 22 22 3 85 0 0 1 542 0 0 33 3 35 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4, 442 1, 225 2, 892 2, 210 1, 703 2, 605 3, 132 1, 555 2, 424 1, 380 1, 621 1, 028 578 903 1, 621 1, 0 135 0 169 86 86 358 0 77 0 1 106 0 14 36 0	5, 165 823 3, 020 6, 436 9, 186 1, 931 2, 941 1, 548 1, 795 1, 352 2, 177 1, 462 1, 322 1, 488 870 488	0 312 0 216 120 4 0 343 34 69 0 1 1 507 498 0 0 12 2 39 0	3, 713 162 2, 269 4, 2679 2, 547 357 2, 853 1, 675 998 1, 045 1, 138 4, 1, 269 1, 690 290 866 290 862 364	0 0 0 177 2222 0 419 339 57 0 1 111 2 2 0 768 0	5, 756 412 2, 401 1, 896 522 1, 987 703 380 22 1, 335 1, 604 257 962 77	
Total	18,012	151, 373	25, 336	115, 849	26, 524	115,827	18, 932	108, 549	14, 836	93, 562

Bureau of Agricultural Economics; compiled from Oil, Paint and Drug Reporter, average of weekly ranges.
Data for 1909-10 to 1924-25 are available in the 1928 Yearbook, table 105.

Preliminary.
 Java and Madura only.
 International Yearbook of Agricultural Statistics.
 Does not include Manchuria after June 30, 1932.
 3-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallou.

Table 96.—Linseed meal, 34 percent protein: Average price per ton, Minneapolis, by months, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age
1925-26 1928-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 43. 80 44. 81 46. 25 45. 75 53. 10 42. 20 26. 20 21. 40 36. 10 41. 75	43. 12 45. 95 47. 55 56. 40 42. 10 25. 75 22. 40 31. 75	43. 70 45. 30 53. 85 55. 70 40. 25 25. 70 21. 50	43. 88 46. 40 54. 90 55. 10 38. 90 31. 40 19. 80 31. 90	44.00 47.45 57.00 55.00 37.90 32.10 19.15 31.65	45. 60 48. 00 56. 90 54. 10 36. 40 30. 15 19. 70 32. 00	47. 35 49. 00 59. 00 51. 75 34. 65 28. 75 19. 30	47. 75 50. 80 56. 60 50. 30 31. 60 28. 00 20. 00	48. 10 51. 40 52. 10 54. 75 30. 75 27. 30 21. 65	47. 25 53. 00 51. 90 48. 70 27. 70 24. 25 25. 20	45. 90 51. 10 51. 20 44. 75 24. 95 21. 40 27. 50	45. 50 49. 10 53. 05 42. 75 25. 60 20. 40 1 37. 40	45.58 48.65

¹ Beginning July 1933, quoted as 37 percent protein. July not included in yearly average.

Table 97.—Rice, rough: Acreage, production, value, shipments, and foreign trade, United States, 1909-34

Year	Acreage harvest-	A verage yield per acre	Produc- tion	by pro-	Farm value, basis Dec. 1	Ship- ments from United States to Alaska,	milled ing ric broke	trade, rice, bu ce bran, r rice, re basis, ye	t includ- neal, and duced to
				ducers Dec. 1 1	price	Hawaii, and Puerto Rico ²	Domes- tic ex- ports	Imports	Net bal- ances 4
1909	723 696 696 723 827 694 803 869 981 1, 109 1, 053 874 890 1, 053 837 849 1, 024 962 962 986 981 1, 024 986 981 787 787	Bushels 33. 8 32. 9 32. 9 34. 7 31. 1 34. 1 34. 5 39. 8 39. 7 39. 8 39. 6 38. 9 38. 6 41. 2 46. 7 46. 5 47. 3 46. 8 49. 0	1,000 bushels 20,607 24,510 25,054 25,054 25,744 28,947 40,861 34,739 38,606 51,648 30,274 41,663 33,238 33,238 34,745 44,422 44,873 44,664 44,422 44,873 41,250 37,058 38,296	Cents 79. 5 67. 8 79. 7 93. 5 85. 8 92. 4 90. 6 88. 9 90. 6 181. 8 260. 0 118. 1 111. 6 89. 9 90. 5 78. 4 40. 6 41. 9 77. 8	1,000 dollars 16, 392 16, 624 18, 274 22, 849 216, 822 22, 849 216, 212 36, 311 36, 313 37, 239 38, 686 37, 239 38, 686 34, 852 44, 852 44, 852 44, 852 45, 205 39, 554 39, 029 40, 384 38, 626 39, 554 39, 55	1,000 bushels 4,266 4,890 4,890 5,244 4,646 4,5191 5,818 5,995 6,614 7,179 8,290 9,094 9,094 9,183 10,342 10,342 10,342 10,342 10,342 10,342 10,450	1,000 bushels 1,082 1,420 1,401 1,601 2,789 2,4391 6,593 7,069 6,953 11,949 4,033 1,734 10,957 11,152 11,15	1,000 bushels 8, 114 7, 516 6, 842 7, 996 10, 447 9, 979 9, 516 7, 778 16, 417 3, 485 2, 650 2, 503 1, 325 1, 124 1, 232 1, 124 1, 232 1, 434	1,000 bushels -6,821 -5,947 -6,139 -9,000 -5,059 -6,028 +1,440 +14,401 +14,603 +12,018 +7,235 +2,535 +2,535 +9,852 +9,852 +9,458

Bureau of Agricultural Economics. Compiled from reports made to the Bureau. Quoted "per ton, bagged, in car lots, sight-draft basis."

¹ From 1924-33, prices are average prices for the crop-marketing season.
2 Year beginning July.
3 Compiled from Commerce and Navigation of the United States, 1909-17; Foreign Commerce and Navigation of the United States, 1918: Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.
4 The difference between the total exports (domestic exports plus reexports) and total imports. Beginning 1933-34 domestic exports and imports for consumption. See introductory text. Net exports indicated by +: net imports indicated by -.
5 Preliminary.

Bureau of Agricultural Economics.

Production figures are estimates of the Cr p Reporting Board, revised 1919-28. See introductory text. See 1927 Yearbook, table 102, for data for earlier years.

TABLE 98.—Rice, rough: Acreage, yield, production, and average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acreage harvested			Yie	ld per a	icre	P	roductio	on	Price f	er crop
State	A ver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1984 1	A ver- age, 1927-31	1933	1934 :	1933	1934 2
Arkansas Louisiana Tevas Californía	1,000 acres 172 486 172 124	1,000 acres 147 394 145 106	1,000 acres 136 394 146 105	Bush- els 47. 1 36. 1 45. 3 57. 5	Bush- els 48. 0 40. 5 53. 0 60. 0	Bush- els 51. 0 40. 5 53. 0 73. 0	1,000 bush- els 8,379 18,537 8,913 7,823	1,000 bush- els 7,056 15,957 7,685 6,360	1,000 tush- els 6,936 15,957 7,738 7,665	Cents 80 78 81 71	Cents 76 79 79 74
United States	954	792	781	42.5	46.8	49.0	43, 651	37, 058	38, 296	77.8	77.5

¹ Preliminary. ² Dec. 1 price.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 99.—Rice, in terms of cleaned rice: Production, world and selected countries. 1909-10 to 1934-35

	Esti-			Pro	duction i	n selecte	d countr	ies 1		
Crop year	mated world, exclu- sive of China	India	Japan	Chosen	Taiwan	Indo- China	Java and Ma- dura ²	Siam 3	Philip- pines	United States
1909-10. 1910-11. 1911-12. 1912-13. 1912-14. 1914-15. 1914-16. 1916-17. 1917-18. 1918-19. 1919-20. 1920-21. 1921-22. 1921-22. 1922-23. 1923-24. 1923-24. 1923-25. 1923-27. 1923-28. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-29. 1923-30. 1930-31. 1931-32. 1932-33. 1933-34. 1933-33. 1933-34.	109, 000 109, 000 113, 000 124, 000 129, 000 132, 000 105, 000 127, 000 127, 000 127, 000 127, 000 127, 000 127, 000 131, 000 131, 000 131, 000 131, 000 131, 000	Million pounds 63, 869 64, 552 63, 943 64, 555 61, 109 773, 315 78, 521 88, 521 86, 164 66, 483 63, 244 73, 242 73, 922 69, 639 67, 939		pounds 2, 343 3, 269	Million 1, 455 1, 456 1, 410 1, 271 1, 610 1, 448 1, 461 1, 519 1, 552 1, 553 1, 552 1, 553 1, 552 1, 552 1, 553 2, 331 2, 638 2, 331 2, 638 2, 331 2, 638	pounds	5,723 5,738 6,170		Million pounds 1, 164 1, 167 1, 1717 1, 404 1, 100 1, 289 1, 745 2, 560 2, 560 2, 560 2, 560 2, 560 2, 560 3, 082 3, 082 3, 082 3, 184 3, 082 3, 184 4, 2, 920	Million pounds 572 681 637 696 677.5 6577 8040 1, 135 9656 1, 072 1, 186 1, 435 1, 091 1, 157 922 909 1, 150 1, 234 1, 206 1, 248 1, 248 1, 148 1, 1, 128 1, 1, 148 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1

¹ China is an important producing country, but official statistics are not available. The Shanghai office of the Bureau of Agricultural Economics made the following estimates of production in China: 1931, 38,530,000 short tons; 1932, 48,950,000 short tons; 1933, 46,940,000 short tons; and 1934, 38,640,000 short

Bureau of Agricultural Economics.

^{1931, 38,539,000} snort tons; 1904, 20,500,000 snort tons.

* Estimates of the production of rice on nonirrigated land are not available prior to 1917-18. Estimates for the years 1909-10 to 1916-17 as given here are for the production on irrigated land. Estimates for the years 1917-18 to 1934-35 are for the total production.

* Estimated figures obtained by multiplying acreage under rice as classified for revenue purposes up to 1912-13, and acreage as reported by the Department of Land and Agriculture from 1912-13 on by an average yield for the years 1920-21 to 1923-24, for which years official estimates have been published of acreage, yield, and total production.

* Preliminary.

Bureau of Agricultural Economics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow: thus, for 1963-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere ryest which begins late in 1933 and ends early in 1934. Estimates of world rice production for the period 1900-01 to 1908-09 appear in 1924 Yearbook, table 138.

Table 100.—Rice: Acreage and production in specified countries, average 1921-22 to 1925-26, annual 1932-33 to 1934-35

		ACI	eage				Ce Ce	cleaned
Country	Aver- age, 1921-22 to 1925-26	1932–33	1933–34	1934~ 35 ¹	Aver- age, 1921-22 to 1925-26	1932-33	1933–34	1934- 35 ¹
NORTHERN HEMISPHERE	1.000	1,000	1,000	1,000	Million	Million	Million	Million
HORITERIA HEBRISIANE	acres	астев	acres	acres	pounds	pounds	pounds	Dounds
Inited States	921	873	792	781	997	1, 146	1,029	1,06
fexico.	2 95	83	81	.01	2 77	7, 110	91	1,00
Central and South America:		55	0.		1	"	0.	
Salvador	2 13			ļ	2 17	ļ	ŀ	
Colombia	3 42				3 21			
British Guiana	45	88			53	114		
Dutch Guiana	10	27			14	34		
Curope:						0.1		
Spain	115	123	116	}	376	433	402	;
Portugal	18	28	110		22	35	402	
Italy	316	335	316	323	729	894	827	84
Yugoslavia	4	5	0.0	1 020	3	4	021	01
Bulgaria	11	19	17	15	14	22	19	1
French West Africa				1 20			10	٠ ١
French Guinea	3 2, 008	49	l	1	3 1, 106	204		
French Senegal	119	124			65	69		
Upper Volta	2 44	18			16	50		
Sudan	4 79	187			4 61	110		
lierra Leone	390	297			311	373		
Cgypt_:	192	489	438	395	320	808	727	69
sia:					1	1]	1
India	81, 400	82, 518	81, 877	l	70, 270	69, 639	67,991	l
TurkeyBritish North Borneo	3 66	65	51	74		66	59	7
British North Borneo	62	73			43			
French establishments in India	45	47			29	37	l	l
Japanese Empire:		1	l	į	l	1	l	l
Japan	7, 705	7,983	7,778	7,794	18, 107	18, 972	22, 251	15,94
Chosen	3,824	4,027	4, 160	3, 938	4, 556	5, 135	5,866	5, 20 2, 88
Taiwan	1, 262	1,642	1,668	1,648	1, 747	2,811	2, 627	2,88
Kwantung French Indo-China	3	2			3	3		
French Indo-China	12,005	13,642			7,704	7,913	8, 302	
Siam		7,441	7,448		6, 065	7,018	6,869	
Federated Malay States	186				127		1	
Unfederated Malay States					300			
Straits Settlements	71	71			75	78		
Philippine Islands	4, 229				2, 744			
Ceylon	799	840			471			
SOUTHERN HEMISPHERE							•	
Brazil	1 1, 029	1	1		5 1, 029	1		1
Argentina	16	29	47		19	32	40	
Australia	(6)	23	71		(7)	53	-10	
Madagascar	1, 298	1, 346	1, 404		5 1, 322	923		
ava and Madura	8.014	9, 118	9, 269		7, 055	8, 187	8,036	
Estimated world total excluding China	0,017	0,110	0, 200		126, 000	132,600	134, 000	

I Preliminary.

Bureau of Agricultural Economics.

Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow; thus, for 1932-33 the crop harvested in the Northern Hemisphere countries in 1932 is combined with the Southern Hemisphere countries in 1932 is co

So the crop harvest which begins late in 1932 and ends early in 1932 is combined with the Southern Hems-sphere harvest which begins late in 1932 and ends early in 1933.

China is an important producing country, but official statistics are not available. The Shanghai office of the Bureau of Agricultural Economics made the following estimates of production in China: 1931, 38,530,000 short tons; 1932, 48,950,000 short tons; 1933, 46,940 000 short tons; and 1934, 38,640,000 short tons.

³⁻year average.

²⁻year average.
4 I year only.
5 4-year average.
6 Less than 500 acres.
7 Less than 500,000 pounds.

Table 101.—Rice, rough: Receipts at mills in Texas, Louisiana, Arkansas, and Tennessee, by months, 1923-24 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1923-24	1,000 bbl. 177 298 457 188 530 180 584 481 228 266 171 244	1,000 bbl. 394 949 853 1,147 1,167 1,197 1,388 1,005 1,442 862 1,067 836	1,000 bbl. 1,512 2,182 925 1,681 1,719 2,113 2,303 2,063 1,810 1,606 2,095 1,974	1,000 bbl. 1, 911 1, 905 1, 131 1, 253 1, 266 1, 936 1, 416 1, 246 1, 408 1, 189 1, 100 910	1,000 bbl. 966 963 1,672 1,053 831 947 797 867 632 724 426 612	1,000 bbl. 1,076 448 1,019 818 853 621 870 1,147 569 687 721	1,000 bbl. 580 197 477 648 805 5961 864 734 747 932	1,000 bbl. 370 43 210 621 942 439 284 601 813 821 496	1,000 bbl. 80 34 194 372 620 429 146 566 599 1,032 191	1,000 bbl. 14 11 119 396 352 232 172 520 702 628 91	1,000 bbl. 9 45 106 430 130 191 48 323 328 257 183	1,000 bbl. 6 8 74 147 17 126 21 172 218 112 153	1,000 bbl. 7,095 7,093 7,232 9,003 9,017 9,855 9,453 9,453 7,626

Bureau of Agricultural Economics. Computed from monthly reports of the Rice Millers' Association and from reports of nonassociation mills. A barrel is equivalent to 162 pounds of rough rice.

Table 102.—Rice: Consumption in the United States and possessions, United States exports and sales, 1918-19 to 1933-34

			Con	sumpti	on in t	he Unit	ed Sta	tes and	possessi	ions			
				Foreign	and T	nited S	tates r	ice					Total
Year beginning August	Uni Sta		Puert	o Rico	Hav	vaii 1	Als	iska	Total	For-	United States rice	United States ex- ports ¹ 2	States rice 1
	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	rice		P 0.1 6.0	
1918-19	1,000 pock- ets 5,829 3,632 5,565 4,890 5,848 6,992 6,060 6,671 7,370 7,017 6,495 7,149 7,621 5,531		1,000 pock- ets 1, 669 1, 4048 1, 643 1, 702 1, 824 1, 874 1, 878 1, 860 1, 833 1, 932 2, 084 1, 941 2, 077 2, 012 2, 249 2, 150	Lb. 114.8 98.6 113.7 113.3 117.4 122.3 118.6 124.0 122.2 132.9 141.5 125.7 134.5 130.3 145.7	1,000 pock- ets 433 438 521 472 562 608 659 658 696 704 814 832 892 913 879 867	Lb. 181. 2 175. 0 199. 2 173. 0 198. 0 205. 9 215. 0 207. 1 211. 6 220. 9 231. 6 229. 4 173. 0 247. 9 238. 6 235. 4	1,000 pock- ets 16 14 13 11 13 13 11 13 11 10	21. 9 16. 0 16. 0 18. 6 17. 6	1,000 pock- ets 7,945 7,742 7,016 8,126 8,126 8,335 8,641 10,019 9,211 10,019 9,281 10,127 9,281 10,127 9,58	1,000 pock- ets 438 691 476 198 315 435 909 464 327 237 271 274 120 109 81	1,000 pock- ets 7,509 4,798 7,266 6,818 7,811 7,981 8,206 8,747 9,692 9,010 9,853 9,434 10,651 8,478	1,000 pock-ets 2,191 4,745 4,863 4,740 3,249 1,564 7,744 2855 2,381 2,390 3,196 2,250 2,217 2,245 1,275 862	1,000 pock- ets 9,700 0,543 12,129 11,560 11,060 11,060 11,128 12,082 12,082 12,082 11,200 12,070 11,090 11,926 9,340

Hawaiian production not included.
Reports of Bureau of Foreign and Domestic Commerce.

Bureau of Agricultural Economics; compiled from annual reports of the Rice Millers' Association, New Orleans. A pocket of milled rice weighs 100 pounds.

Table 103 .- Rice. Blue Rose, clean Fancy: Wholesale price per pound, New Orleans, by months, 1924-25 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age
1924-25 1925-26 1926-27 1927-23 1923-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 6. 62 7. 12 6. 75 4. 62 4. 25 4. 50 3. 25 3. 18 3. 74	Cents 6. 38 6. 62 6. 00 4. 62 4. 25 4. 12 3. 12 2. 26 3. 45 3. 70	Cents 5. 88 6. 62 5. 62 4. 25 4. 25 4. 25 3. 88 2. 88 2. 88 3. 75 3. 68	Cents 6. 40 7. 12 5. 12 3. 88 4. 12 4. 00 3. 62 2. 94 3. 55	Cents 6. 56 7. 19 5. 00 4. 00 4. 12 3. 94 3. 62 2. 94 3. 87 3. 57	Cents 6. 85 7. 38 4. 88 4. 00 4. 05 4. 25 3. 50 2. 84 1. 89 3. 90	Cents 6. 88 7. 05 4. 88 3. 81 4. 00 4. 38 3. 62 2. 66 1. 3. 90	Cents 6.75 7.00 4.81 3.75 4.00 4.50 2.47 2.47 3.90	Cenis 6. 69 6. 88 4. 62 4. 00 4. 38 3. 50 2. 09 3. 90	Cents 7. 12 7. 00 4. 88 4. 38 4. 62 3. 50 2. 12 2. 65 3. 90	Cents 7. 38 6. 88 5. 05 4. 50 4. 00 4. 3. 38 2. 21 2. 79 3. 90	Cents 7. 50 6. 88 4. 62 4. 25 4. 12 4. 50 3. 38 2. 89 3. 88	Cents 6.75 6.98 5.19 4.17 1 4.07 4.34 3.68 2.64 2.21 3.78

¹ A vergge for 11 months

Bureau of Agricultural Economics. Compiled as follows: 1924-25 to 1930-31 from annual reports of the New Orleans Board of Trade. (Highest quotations represent Fancy grade.) Beginning 1931-32, from rice market reports received weekly by the Bureau.

Table 104.—Rice, including flour, meal, and broken rice: International trade, average 1925-29, annual 1930-33

Calendar vear Country Average 1925-29 1030 1931 1932 1933 1 Exports Imports Exports Imports Exports Imports Exports Imports Exports Imports PRINCIPAL EXPORT-Million Million Million Million Million pounds pounds pounds Million Million Million Million Million ING COUNTRIES pounds pounds pounds pounds pounds pounds 224 3, 493 3, 101 5, 862 2, 464 2, 281 468 4, 840 2, 099 2, 960 331 4, 794 2, 609 3, 709 335 British India 224 160 100 267 4, 174 2, 682 Indo-China..... 0 0 Siam 3 ŏ õ ō Italy_____United States_____ 5 31 0 13 28 490 3 ĸ 207 60 274 257 19 252 250 127 20 125 ñ Spain.... ñ ñ ñ 115 93 87 91 19 Egypt..... Madagascar.... 59 112 26 63 55 39 194 ากร Õ ō ō Õ 8 Brazil.... 36 25 õ 100 ñ 62 ñ 59 ŏ 332 Total.... 12, 436 383 11,670 220 10, 862 200 11, 955 7. 649 273 PRINCIPAL IMPORT-ING COUNTRIES 2, 652 2, 106 1, 385 1, 063 2,786 1,585 5 234 China. 1, 432 1, 817 6 2,024 4 5 4 2, 942 British Malaya Netherlands Indies 412 623 1,960 **490** 425 1, 574 371 27 38 2 0 326 1,342 934 1, 036 337 51 1, 303 54 4 21 2 0 Ceylon.... 1, 010 1, 048 961 A 277 Japan____ 14 97 397 67 26 314 Germany_____ 325 159 550 137 896 105 848 82 678 France_____ 169 532 **190** 534 94 646 86 802 1, 225 Cuba..... Netherlands 461 272 216 14 1 339 333 312 0 443 0 0 224 16 242 258233 189 135 180 United Kingdom Philippine Islands 269 254 257 267 226 11 8 147 24 Argentina Union of Soviet Soō 74 ō 159 ō 116 ō 92 cialist Republics. 126 92 108 2 n 1 2 77 140 2 Mauritius. 129 ō õ õ 126 Ô ñ 114 Czechoslovakia.... 112 129 0 113 Belgium 91 105 20 21 121 124 Total.... 10, 422 8,643 1,433 1, 200 10, 218 1,304 8,949 963 9,800 741

Bureau of Agricultural Economics: official sources except where otherwise noted.

Mostly milled rice. Under rice is included paddy, unhulled, rough, milled, polished, broken, and cargo rice, in addition to rice flour and meal. Rice bran is not included. Rough rice, or paddy, where specifically reported has been reduced to terms of milled rice at the ratio of 162 pounds of rough or unhulled to 100 pounds of milled. "Rice, other than whole or cleaned rice", in the returns of the United Kingdom is not considered paddy, since the chief sources of supply indicate that it is practically all hulled rice. Cargo rice, a mixture of hulled and unhulled, is included without being reduced to terms of milled. Broken rice and rice flour and meal, are taken without being reduced to terms of whole milled rice.

¹ Preliminary

¹ Preliminary.

2 International Yearbook of Agricultural Statistics.

3 Year ended Mar. 31 of following year.

4 Does not include Manchuria after June 30, 1932.

5 Java and Madura only.

Table 105.—Buckwheat: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harv	ested	Yie	ld per a	cre	Pı	oductio	on	Price fo	
State and division	Aver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	1933	1934 1
Maine	1,000 acres 11 2 174 1 176	1,000 acres 16 2 139 1	1,000 acres 12 2 147 2 138	Bush- els 19.6 21.0 17.2 19.8 17.8	Bush- els 20. 0 21. 0 19. 0 15. 0 19. 0	Bush- els 21. 0 22. 0 19. 8 23. 0 22. 5	1,000 bushels 200 42 2,859 20 3,002	1,000 bushels 320 42 2,641 15 2,679	1,000 bushels 252 44 2,911 46 3,105	Cents 65 64 54 58 54	Cents 71 71 56 71 55
North Atlantic	364	299	301	17. 6	19. 1	21. 1	6, 123	5, 697	6, 358	54.7	56, 3
Ohio Indiana Illinois. Michigan. Wisconsin Minnesota. Iowa. Missouri North Dakota. South Dakota. Nebraska.	26 14 5 30 19 71 7 1 19 18	24 17 6 24 17 15 5 1 2	22 19 18 15 24 14 14 1 2 1 (²)	17. 7 13. 6 13. 7 11. 5 12. 0 10. 9 13. 8 10. 8 10. 4 10. 3 10. 1	15. 5 13. 0 12. 5 11. 0 11. 0 8. 5 13. 5 11. 0 5. 0 11. 0	19. 5 15. 0 18. 5 12. 5 11. 3 8. 0 15. 0 9. 0 1. 5 5. 0	451 199 68 326 231 721 89 11 213 201	372 221 75 264 187 128 68 11 6 5	429 285 333 188 271 112 210 9 3 5	59 55 56 50 54 43 64 67 51 48	60 64 64 59 64 54 68 76 63 72
North Central	212	113	130	12. 4	11.9	14, 2	2, 520	1, 348	1,845	54.4	62. 4
Delaware Maryland Virginia West Virginia North Carolina	1 7 14 22 5	1 6 13 22 4	1 5 14 21 4	11. 4 19. 4 13. 3 17. 9 13. 4	10. 0 18. 0 13. 0 18. 5 17. 0	12, 0 22, 0 14, 0 20, 5 16, 0	11 138 182 407 66	10 108 169 407 68	12 110 196 430 64	73 59 66 66 71	69 62 71 73 78
South Atlantic	49	46	45	16. 2	16. 6	18.0	804	762	812	65. 6	71. 3
Kentucky Tennessee	2 2	2 2	2 2	9. 9 13. 6	8. 0 10, 5	10. 0 13. 5	23 27	16 21	20 27	80 78	85 82
South Central	4	4	4	11, 2	9. 2	11.8	50	37	47	78. 4	83. 0
United States	630	462	480	15.8	17.0	18, 9	9, 496	7, 844	9,062	55, 8	59. 0

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 106.—Buckwheat: Acreage price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weight- ed aver- age
1925-26 1926-27 1927-28 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 101. 2 90. 4 92. 3 92. 6 96. 6 97. 1 52. 4 43. 0 68. 4 68. 8	Cents 87. 6 86. 5 82. 9 84. 5 95. 8 90. 7 40. 2 40. 3 56. 7 60. 4	Cents: 86.7 83.6 79.4 84.8 95.6 82.8 41.2 39.0 52.5 55.5	Cents 87. 9 83. 5 81. 0 88. 7 95. 9 80. 0 41. 9 38. 3 51. 3 56. 1	Cents 85. 7 83. 6 82. 0 91. 2 97. 3 79. 1 42. 1 39. 2 52. 1	Cents 80. 9 84. 6 85. 2 94. 3 95. 8 76. 6 40. 9 39. 1 52. 8	Cents 81. 7 86. 0 90. 2 94. 1 94. 9 77. 4 41. 7 39. 5 54. 3	Cents 82. 5 85. 1 94. 8 96. 4 94. 8 75. 2 41. 4 42. 7 55. 5	Cents 85. 0 88. 1 102. 3 96. 5 95. 7 73. 2 40. 9 48. 4 55. 5	90. 1 98. 8 109. 0	Cents 89. 9 101. 0 108. 0 100. 4 98. 3 70. 0 44. 2 66. 3 64. 7	Cents 93. 7 98. 1 98. 1 99. 6 97. 4 59. 2 44. 3 67. 3	Cents 87. 2 87. 1 86. 9 89. 9 96. 3 78. 9 42. 3 43. 4 55. 8

¹ Preliminary.

¹ Preliminary. ² Less than 500 acres.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting state price averages for the crop-marketing season. Data for earlier years in 1928 yearbook, table 118. Only monthly prices are comparable.

Table 107.—Buckwheat: Acreage, production, value, and foreign trade. United States. 1919-34

Acreage	Average	Produc	Weighted average price per	value,	Foreign tr year	ade, inclu- beginning	ding flour, July ¹
har- vested	yield per acre	tion	bushel received by pro- ducers	weighted average price	Domestic exports	Imports	Net bal- ance 2
1,000 acres	Bushels	1,000 bushels 12,690	Cents	1,000 dollars	1,000 bushels	1,000 bushels	1,000 bushels
729 640 729	17.3 16.7 18.5 16.2	12, 707 12, 193 11, 822 11, 776	158.7 125.4 87.9 89.5	20, 163 15, 288 10, 391 10, 536	245 399 485 172	160 336 113 286	+85 +63 +372 -114
689 717 737 742	16.8 17.0 16.9	12,004 12,508 12,559	107. 4 87. 2	13, 433 10, 950	191 79	322 546 88	-230 -355 -9
764 679 <i>622</i>	16.8 14.9 13.4	12, 820 10, 117 8, 359	86. 9 89. 9	11, 137 9, 095	554 229	74 79	-20 +480 +150
627 573 505 454 462	13.9 12.1 17.6 14.8 17.0	8, 692 6, 960 8, 890 6, 727 7, 844	96.3 78.9 42.3 43.4 55.8	5, 493 3, 764 2, 918 4, 380	22 85 524 33 42	171 426 14 62 104	-149 -341 +510 -29 -62
	1,000 acres 7435 7435 733 729 640 729 689 717 737 742 679 622 627 627 627 628 639 645 645 645 645 645 645 645 645 645 645	1,000 acres Bushels 745 17.1 733 17.2 16.7 759 16.2 689 717 16.8 717 16.8 717 16.8 679 16.2 752 16.9 679 16.2 754 15.4 657 15.5 15.4 657 15.5 15.4 657 15.5 15.5 15.5 15.5 15.5 15.5 17.6 454 14.8 14.8	har-vested yield per tion 1,000 acres Bushels bushels 745 17.1 12,690 733 17.3 12,707 729 16.7 12,193 640 18.5 11,822 729 16.2 11,776 689 16.8 11,596 717 16.8 12,596 717 16.8 12,508 742 16.9 12,559 679 16.2 10,976 764 16.8 12,820 679 14.9 10,117 622 15.4 8,559 679 14.9 10,117 622 15.4 8,559 677 13.9 8,692 578 12.1 6,980 5578 12.1 6,980 5578 12.1 6,980 5578 12.1 6,980 558 17.6 8,890	Acreage har- vested vield per acre 1,000 acres 745 717.1 729 16.7 729 16.2 719 640 18.5 11,200 18.5 745 719 16.8 11,596 717 16.8 12,596 717 16.9 16.8 11,596 717 16.9 16.9 16.9 16.9 16.9 16.9 16.9 16.9	Acreage har- vested vield per acre 1,000 acres 7,45 717, 1 738 17, 31 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 18, 690 729 16, 2 11, 707 18, 2 10, 906 721 18, 9 18, 2 18, 3 18	Acreage har- vested vield per acre 1,000 acres 745 17.1 17.2 11.2 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3	Acreage harvested vield per acre vested vield per acre vested vield per acre vested vield per acre vested v

¹ Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34 and official records of the Bureau of Foreign and Domestic Commerce. Buckwheat—imports for consumption, 1919-24 and 1930-34—general imports, 1925-29; buckwheat flour imports for consumption 1919-34. Buckwheat flour converted to terms of grain on the basis that 1 barrel of flour is the product of 7 bushels of grain.

¹ The difference between total exports (domestic exports plus reexports) and total imports. Beginning 1930-31 domestic exports and imports for consumption. See introductory text. Net exports indicated by +, net imports indicated by -.

³ Preliminary.

Bureau of Agricultural Economics Production figures are estimates of the Crop Reporting Board, revised 1919–28. See introductory text. Italic figures are census returns. See 1927 Yearbook, table 111, for data for earlier years.

Table 108.—Sorghums ¹ cut for grain, forage, and all purposes: Acreage, production, and price per bushel received by producers, United States, 1919-34

		Grain			Forage			A.	l purpos	es	
Year	Acre- age	Yield per acre	Produc- tion	Acre- age	Yield per acre	Produc- tion	Acre- age	Equiv- alent yield per acre	produc- tion on	Price per bushel, Dec. 12	Farm value, basis Dec. 1 price
1919	1,000 acres 3,726	Bushels 19.8	1,000 bushels 73,654	1,000 астев	Short tons	1,000 short tons	1,000 acres	Bushels	1,000 bushels	Cents	1,000 dollars
1919 1920 1921 1922 1923 1924	3, 630 4, 027 3, 700 3, 369 4, 204 5, 526	20. 4 21. 8 19. 2 14. 7 14. 7 16. 6	73, 952 87, 734 70, 950 49, 523 61, 648 58, 700	2,665 2,513 2,424 2,127 2,150	1.67 1.78 1.57 1.37 1.40	4, 438 4, 479 3, 794 2, 917 3, 015	6, 295 6, 540 6, 124 5, 496 6, 354	19. 4 20. 9 18. 3 13. 7 13. 9	122, 330 136, 367 112, 273 75, 530 88, 466	128. 0 94. 2 39. 2 87. 2 93. 5	156, 531 128, 504 44, 062 65, 898 82, 674
1924 1925 1926 1927 1928 1929 3	3,506 3,887 4,211 4,270 4,121 5,522	16.7 14.2 16.8 17.0 17.8 13.9	58, 474 55, 244 70, 869 72, 738 73, 427 49, 109	2, 184 2, 385 2, 229 2, 452 2, 406	1.40 1.29 1.32 1.47 1.48	3, 050 3, 076 2, 950 3, 613 3, 566	5, 690 6, 272 6, 440 6, 722 6, 527	15. 4 13. 1 15. 8 16. 0 17. 1	87, 870 82, 224 101, 502 107, 261 111, 690	85. 5 75. 1 54. 2 77. 1 65. 7	75, 098 61, 733 55, 007 82, 666 73, 418
1929 1930 1931 1932 1933 1934 4	3, 467 3, 449 4, 509 4, 548 4, 883 2, 998	14.2 10.8 15.6 14.4 11.8 6.2	49, 399 37, 203 70, 116 65, 339 57, 480 18, 558	2,664 3,137 2,657 3,316 3,266 4,571	1.37 1.17 1.30 1.35 1.24	3, 654 3, 678 3, 446 4, 471 4, 044 3, 527	6, 131 6, 586 7, 166 7, 864 8, 149 7, 569	13. 2 9. 8 14. 7 13. 5 10. 8 4. 6	81,041 64,416 105,369 106,306 88,082 34,542	66. 8 56. 2 25. 6 19. 1 51. 0 82. 3	54, 173 36, 220 27, 020 20, 349 44, 911 28, 419

Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised 1919-28. See introductory text. Italic figures are census returns.

¹ Kafirs, milo, feterita, durra, etc.

³ From 1919 to 1924, Nov. 15 price; 1925 and 1926, Dec. 1 price; 1927-83, average price for the crop-marketing season; 1934, Dec. 1 price.

⁴ Includes sorgo seed.

Table 109.—Sorghums: Acreage, yield, production, and average price per bushel received by producers, by States, averages, and annual 1933 and 1934

		eage for ourposes			ivalent : per acre			uction f urposes		Pric erop	
State	Aver- age, 1927-31	1933	1934 3	Aver- age, 1922-31	1933	1934 3	Aver- age, 1927-31	1933	1934 3	1933	1934 4
Missouri Nebraska Kansas Oklahoma. Texas Colorado. New Mexico. Arizona California	1,000 acres 76 19 1,130 1,377 3,428 202 287 26 81	1,000 acres 88 37 1,607 1,400 4,228 284 372 35 98	1,000 acres 119 74 1, 205 1, 232 4, 482 102 242 35 78	Bush- els 14. 6 15. 4 15. 0 11. 0 15. 0 11. 2 16. 8 25. 3 27. 5	Bush- els 16. 0 15. 5 10. 0 8. 5 11. 0 7. 5 14. 0 30. 0 33. 0		1,000 bushels 1, 182 331 17, 578 14, 386 50, 732 2, 301 4, 535 709 2, 203	1,000 bushels 1,408 574 16,070 11,900 46,508 2,130 5,208 1,050 3,234	1,000 bushels 833 148 3,615 7,392 17,928 306 1,694 910 1,716	Cents 56 61 38 47 58 34 42 42 54	Cents 91 129 67 80 85 104 90 78 78
United States	6, 626	8, 149	7, 569	14.3	10.8	4.6	93, 955	88, 082	34, 542	51.0	82.3

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 110.—Grain sorghums: 1 Receipts at Kansas City, 1924-25 to 1933-34

Year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
1924-25. 1925-26. 1926-27. 1927-23. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34.	1,000 bu. 647 279 397 410 449 294 299 257 105 217	1,000 bu. 1,152 629 493 905 675 626 239 76 127 193	1,000 bu. 683 416 626 696 856 296 168 133	1,000 bu. 636 290 442 519 525 447 145 181 78	1,000 bu. 497 261 293 592 705 327 130 115 88	1,000 bu. 320 211 216 392 426 296 139 143 154	1,000 bu. 301 290 192 323 394 202 109 116	1,000 bu. 440 469 241 343 668 179 204 70 90	1,000 by. 221 162 249 224 207 68 41 70 719	1,000 bu. 183 94 285 87 196 42 38 77 34	1,000 bu. 68 136 79 51 97 52 31 69 60	1,000 bu. 24 97 112 236 182 34 134 148	1,000 bu. 5, 172 3, 334 3, 625 4,778 5, 380 2, 863 1, 671 1, 493 1, 147

¹ Includes kafir, milo, and feterita. Receipts for 1909-10 to 1923-24 available in 1931 Yearbook, table 131. Bureau of Agricultural Economics; compiled from annual statistical reports of Kansas City Board of

Table 111.—Grain sorghums: Receipts graded by licensed inspectors, all inspection points, total of all classes under each grade, 1925-26 to 1933-34

			Grade			* ***********************************
Year beginning July	No. 1	No. 2	No. 3	No. 4	Sample	Total
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33.	Cars 312 878 1, 175 866 557 224 1, 256 323 409	Cars 4, 158 7, 180 9, 885 7, 247 5, 495 2, 368 11, 556 2, 501 2, 614	Cars 5, 796 6, 674 8, 125 5, 400 4, 043 2, 432 3, 197 1, 183 1, 081	Cars 1, 639 1, 792 3, 143 6, 794 3, 664 1, 240 944 757 427	Cars 495 691 965 3,969 1,722 390 597 341 465	Cars 12, 400 17, 21i 23, 29i 24, 27i 15, 48i 6, 654 17, 550 4, 996

¹ Kafirs, milo, feterita, durra, etc. ² Includes grain equivalent on forage acreage.

³ Preliminary. 4 Dec. 1 price.

Table 112.—Kafir, No. 2 White: Weighted average price per bushel of reported cash sales, Kansas City, 1925-26 to 1934-35

Year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Aver- age
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1933-34	Cents 82 64 69 78 77 63 40 28 44	Cents 77 64 71 74 73 61 33 25 41 116	Cents 77 63 74 75 76 58 34 25 44	Cents 72 63 81 80 72 53 31 24 42	Cents 68 65 88 71 77 53 32 27 42	Cents 70 69 90 71 91 59 32 39 46	Cents 69 79 92 71 91 58 31 43 52	Cents 70 102 91 74 94 57 52 53	Cents 79 110 92 89 92 51 32 68 76	Cents 76 97 83 90 101 42 36 67 90	Cents 74 89 105 98 42 34 64	Cents 71 70 83 81 36 25 52	Cents 73 82 77 55 44

Bureau of Agricultural Economics; computed by weighting selling price by number of car lots sold as reported in Kansas City Grain Market Review, formerly Daily Price Current.

Quoted per 100 pounds; converted to bushels of 56 pounds. Data for 1909-10 to 1924-25 available in 1930 Yearbook, table 123.

STATISTICS OF COTTON, SUGAR, AND TOBACCO

Table 113.—Cotton: Acreage, production, value, and foreign trade, United States, 1866-1934

Year	Acreage in culti-	Acreage	Aver- age yield	Pro- duc-	Price per pound received	Farm value, basis	per p	et price cound, begin- lugust 4	Forei begi	gn trade nning A	, year ugust
1001	vation July 1 1	vested	per acre	tion 2	by pro- ducers Dec. 1 3	Dec. 1 price	New York	New Orleans	Domes- tic exports	Im- ports	Net exports
	1,000	1,000		1.000		1,000			1,000	1,000	1,000
	астев	астев	Lb.	bales	Cents	dollars	Cents	Cents	bales	bales	bales
1866		7, 666	121. 5	2,097	00.00	40000	32, 16		10 1. 323	2	1, 324
1867		7, 864	142.6	2, 520			24. 54		11 1, 511	2	1, 510
1868		6, 973	150.7	2, 366			28. 64			6	1, 284
1869				3,012					1,200		1,201
1869		7, 751	155. 4	3,011			25, 31		1.980	4	1, 977
1870 1871		9, 238	208. 2	4, 352	·		17.04		2,894	3	2, 893
1871		8, 285	159.0	2,974		1	1 21. 88	1	1,851	7	1,844
1872 1873		9, 580	182. 3	3, 933			20. 22		2,437	11	2, 426
1873		10, 998	168. 3	4, 168			17. 29		2, 706	5	2, 702
1874 1875		10, 753	157. 0	3, 836			15, 67		2, 523	5 5	2, 520
1875		11, 348	181. 2	4, 631		l	13, 10		3,003	5	2,999
1876 1877		11, 747	167. 6	4, 474			11. 89		2,869	6 7	2,864
1877		12, 606	170. 4	4, 773			11. 17		3, 198	7	3, 194
1878		13, 539	167. 5	5, 074			10.82		3, 265	6	3, 259
1879		14, 480		5, 755							
1879		14, 474	180. 5	5, 756			12.13		3, 711	7	3, 705
1880		15, 921	190. 9 149. 0	6, 606			11.36		4, 409	9	4, 403
1881		16. 483 15, 638	208. 9	5, 456		233-237-	12.09		3, 430	9	3, 426
1882		16, 295	162.0	6, 949	9. 12	311, 644	10.81		4, 582	. 9	4, 577
1883		16, 295	155. 1	5, 713 5, 682	9. 13 9. 19	252, 501	10.87		3, 745	15	3, 734
1884 1885		17, 922	169. 9	6, 576		251, 581				10	3, 733
1886		18, 370	164. 3	6, 505	8.39 8.06	267, 481 254, 733	9.4/			11	4, 185
1887		18, 793	175. 1	7, 047	8.55	294, 733	70 15		4, 274	. 9	4, 266
1888		19, 520	169. 5	6. 938	8.50	294, 183	10. 13		4, 557 4, 720	11 17	4, 547 4, 704
1889		20, 175	100. 0	7, 478	0.00	284, 100	10. 44		4, 120	11	4, 104
1889		20, 191	176. 9	7, 473	8, 55	319, 334	11. 27	10.69	4.934	19	4, 915
1890		20, 191	195. 5	8, 653	8.59	368, 108	9. 48	9.08	5, 859	45	5, 815
1901		21, 503	198.7	9, 035	7. 24	323, 943	7, 68	7. 28	5.888	61	5, 827
1891 1892		18, 869	168. 7	6, 700	8.34	277, 556	8.45	8. 15	4, 456	90	4. 363
1902		20, 256	175.3	7, 493	7.00	260, 096	7. 75	7. 30	5, 309	58	5, 258
1893 1894		21, 886	219.0	9, 901	4. 59	230, 071	6.38	5. 86	7,010	104	6, 908
1895		19, 839	172. 2	7, 162	7.62	272, 378	8. 10	7.68	4,710	115	4, 595
1895 1896		23, 230	175. 2	8, 533	6.66	283, 463	7. 71	7. 28	6, 172	119	6, 057
1000				S, 000	. 5.00	, 200	****		-,		J, 001

1 For 1909-26, inclusive, the acreage figures relate to June 25 instead of July 1.
2 Department figures are in running bales for all years prior to 1899, and in 500-pound gross-weight bales 1899-1934. Agricultural census figures for all periods are in running bales.
3 Calculations of average price and farm value not completed. Beginning with 1908 prices are weighted average prices for crop-marketing season.
4 New York prices 1886-67 to August 1871, Chronological and Statistical History of Cotton, by E. J. Donnell; 1871-72 to August 1900, Commercial and Financial Chronicle, average of daily quotations; beginning 1900 from reports of the New York Cotton Exchange except Sept. 23-Nov. 16, 1914, when the exchange was closed (prices for this period from the Commercial and Financial Chronicle). New Orleans Crotton Exchange direct to this bureau. These central market prices are for Middling grade, 74-inch staple, only.

Cotton Exchange direct to this dureau. These central market parce and staple, only.

§ Excluding linters from 1914 to 1934.

§ Compiled from Commerce and Navigation of the United States, 1868-1917; Foreign Commerce and Navigation of the United States, 1918; Monthly Summary of Foreign Commerce of the United States, June and July 1919-34, and January 1927-34.

§ Bales of 500 pounds gross weight.

§ Bales of 478 pounds net, which are equivalent to bales of 500 pounds gross weight.

§ Total exports (domestic plus foreign) minus imports.

§ Total exports (domestic plus foreign) minus imports.

10 Year beginning July.

11 13 months, July-July.

Table 113.—Cotton Acreage, production, value, and foreign trade, United States, 1866-1934.—Continued

1,000												
1,000	Year	in	Acreage	age		per pound	value,	per p	ound, begin-	Foreign trade, year beginning August		
1897			vested		tion 3	ducers				tic exports	ports	exports
1897 25, 131 209.0 10, 899 6. 68 367, 065 6. 40 5. 84 7, 757 102 7, 62 1898 24, 715 223.1 11, 278 5. 73 330, 282 6. 00 5. 46 7, 662 105 7, 5 1899 24, 163 185.0 9, 346 6. 98 325, 208 8. 36 8. 03 6, 228 140 6, 09 1900 24, 886 194.7 10, 124 9. 15 483, 395 9. 38 6, 800 109 6, 6 1901 27, 561 184.7 7, 10, 630 7. 60 403, 717 9. 96 9, 64 7, 044 151 6, 91 1902 27, 561 184.7 7, 10, 630 7. 60 403, 717 9. 96 9, 64 7, 042 160, 9 9, 851 10, 49 516, 764 12. 84 12. 49 6, 207 103 6, 1 1904 30, 077 213.7 31, 438 8. 98 603, 433 9. 09 8. 70 8, 908 <t< td=""><td></td><td></td><td></td><td>7.5</td><td>1,000</td><td>Comto</td><td></td><td>Cente</td><td>Cente</td><td></td><td>1,000</td><td>1,000</td></t<>				7.5	1,000	Comto		Cente	Cente		1,000	1,000
1898 24, 715 223. 1 11, 278 5. 73 330, 282 6. 00 5. 46 7, 662 105 7, 5 1899 24, 163 185. 0 9, 346 6. 98 326, 208 8. 36 8. 03 6. 228 140 6, 0 1900 24, 886 194. 7 10, 124 9. 15 483, 295 9. 38 8. 40 6, 949 202 6, 7 1901 27, 050 168. 2 9, 508 7. 050 186. 2 9, 508 7. 050 186. 2 9, 508 7. 050 186. 2 9, 508 7. 050 186. 2 9, 508 7. 050 180. 7 10, 630 7. 60 403, 717 9. 96 9. 64 7, 084 151 6, 9 9. 61 1903 7. 67 10. 78 569, 788 11. 30 10. 97 7, 118 151 6, 99 8. 129 14. 10 10. 78 569, 788 11. 30 10. 97 7, 118 144 6, 99 19. 69 14. 10 10. 80 8. 428 129 8, 75 19. 89 129 <td< td=""><td>1897</td><td></td><td>25, 131</td><td></td><td>10, 899</td><td></td><td></td><td>6.40</td><td></td><td>7. 757</td><td></td><td>7,656</td></td<>	1897		25, 131		10, 899			6.40		7. 757		7,656
1899	1898		24, 715	223.1	11. 278	5.73		6.00	5. 46	7, 662	105	7, 557
1900	1899		24, 275	105 0	9,555	8 08	206 200	0 26	6 03	8 999	140	
1905	1000		24, 886				463, 295	9.38	0.00	6, 800		6, 692
1905	1901		27, 050	168. 2	9,508	7.03	334, 075	8.73		6, 949	202	6,750
1905	1902		27, 561	184.7	10, 630		403, 717		9.64	7, 084		6, 936
1905	1903		27, 762		9,851			12.84		6, 207		6, 107
1907	1904		1 00.011	182.3	10, 576	10.78	569 788			7 118		6, 980
1908	1906		31, 404	202.3	13, 274	9, 58		11. 24		8.943		8, 741
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1907		30, 729		11, 106					7.666		7, 518
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1908		31,091	203.8	13, 241	9.01	596, 608	10. 23	9.80	8, 955	181	8, 778
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1909	21 744		156 5	10,048	13 60	680 246	14 66	14 22	6 353	170	8 104
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1909	32, 480	31, 508		11, 609		809, 724	14.87		8,027		7, 787
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1911	35, 634	34, 916	215.0	15, 694	9.60	752, 925	10.85	10.85	11, 116	233	10.885
1915 30, 544 29, 951 178. 5 11, 172 11. 22 626, 774 11. 98 11. 68 6, 113 458 5, 6 1916 33, 977 33, 071 165. 6 11, 448 17. 34 992, 304 19. 28 18. 84 5, 525 311 5, 2 1917 33, 064 32, 245 167. 4 11, 284 27. 12 1, 529, 862 29. 68 28. 96 4, 402 231 4, 1 1918 36, 123 35, 638 164. 1 12, 018 28. 93 1, 738, 071 31. 01 29. 87 5, 774 211 5, 5 1919 34, 573 32, 906 165. 9 11, 411 35. 41 2,020, 398 38. 29 38. 21 6, 707 732 5, 9 1920 35, 872 34, 408 188. 7 13, 429 15. 92 1,069, 257 17. 89 16. 55 5, 973 237 5, 7 1921 29, 716 28, 678 132. 5 7,945 17. 01 675, 773 18. 92 17. 92 6, 348 380 5, 9 1922 37, 000 <	1912		32, 557		13, 703					9.146		8,899
1915 30, 544 29, 951 178. 5 11, 172 11. 22 626, 774 11. 98 11. 68 6, 113 458 5, 6 1916 33, 977 33, 071 165. 6 11, 448 17. 34 992, 304 19. 28 18. 84 5, 525 311 5, 2 1917 33, 064 32, 245 167. 4 11, 284 27. 12 1, 529, 862 29. 68 28. 96 4, 402 231 4, 1 1918 36, 123 35, 638 164. 1 12, 018 28. 93 1, 738, 071 31. 01 29. 87 5, 774 211 5, 5 1919 34, 573 32, 906 165. 9 11, 411 35. 41 2,020, 398 38. 29 38. 21 6, 707 732 5, 9 1920 35, 872 34, 408 188. 7 13, 429 15. 92 1,069, 257 17. 89 16. 55 5, 973 237 5, 7 1921 29, 716 28, 678 132. 5 7,945 17. 01 675, 773 18. 92 17. 92 6, 348 380 5, 9 1922 37, 000 <		35, 721	35, 205	192.3	16, 100		884, 926	13. 21	13. 12	9,508		9, 251
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1914								11.68	6, 102 6, 113		5, 673
1917. 33, 664 32, 245 167.4 11, 284 27, 12 1, 529, 862 29, 68 28, 96 4, 402 231 4, 191 1918. 36, 123 35, 038 164.1 12, 018 28, 93 1, 738, 071 31. 01 29, 87 5, 774 211 5, 5 1919. 34, 573 32, 906 165.9 11, 411 35, 41 2, 020, 398 38, 29 38, 21 6, 707 732 5, 9 1920. 35, 872 34, 408 186.7 13, 429 15, 92 1, 099, 257 17. 89 16, 55 5, 973 237 5, 7 1921. 29, 716 28, 678 132.5 7, 945 17. 01 675, 773 18. 92 17. 92 6, 348 380 5, 9 1922. 32, 176 31, 361 148.8 9, 755 22. 87 1, 115, 578 26. 24 25, 94 5, 007 492 4, 5 1923. 37, 000 35, 550 136.4 10, 140 28. 69 1, 454, 320 31. 11 30. 33 5, 815 306 5, 5 1924. 46, 992 </td <td>1916</td> <td></td> <td>33, 071</td> <td></td> <td>11. 448</td> <td>17. 34</td> <td></td> <td></td> <td></td> <td>5. 525</td> <td></td> <td>5, 219</td>	1916		33, 071		11. 448	17. 34				5. 525		5, 219
1918. 36, 123 35, 388 164. 1 12, 018 28, 93 1, 738, 071 31. 01 29, 87 5, 774 211 5, 5 1919. 34, 573 32, 906 165. 9 11, 411 35, 41 2, 020, 398 38, 29 38, 21 6, 707 732 5, 9 1920. 35, 872 34, 408 188. 7 13, 429 15, 92 1, 699, 257 17, 89 16, 55 5, 973 237 5, 973 1921. 29, 716 28, 678 132, 5 7, 945 17, 01 675, 773 18, 92 17, 92 6, 348 380 5, 9 1922. 32, 176 31, 361 148, 8 9, 755 22, 87 1, 115, 578 26, 24 25, 94 5, 007 492 4, 5 1923. 37, 000 35, 550 136. 4 10, 140 28, 69 1, 454, 320 31, 11 30, 33 5, 815 306 5, 5 1924. 40, 692 39, 503 165. 0 13, 630 22, 91 1, 561, 022 24, 21 8, 240 328 7, 9 1925. 45, 947 44, 406 192, 8 17, 978 12, 47 1, 121, 185 15, 15 14, 74 11, 299 419 10, 9	1917	33, 064	32, 245		11, 284			29.68		4.402		4, 175
1920	1918	36, 123	35,038	164.1	1 12, 018	28.93	1, 738, 071	31.01	29.87	5, 774	211	5, 568
1920	1010	84 573	32,740	165 9	11 411	35 41	2 020 308	28 20	38 21	6 707	732	5, 993
1921	1920	35. 872	34.408	186.7	12 429		1, 069, 257	17.89	16. 55	5, 973		5, 753
1923 37,000 35,550 136.4 10,140 28.69 1,454,320 31.11 30.33 5,815 306 5,5 1924 40,692 39,503 165.0 13,630 22.91 1,561,022 24.74 24.21 8,240 328 7,9 1925 45,972 44,390 173.5 16,105 19.59 1,577,091 20.53 19.71 8,267 340 7,9 1926 45,847 44,616 192.8 17,978 12.47 1,121,185 15.15 14.74 11,299 419 10,9 1927 39,479 38,349 161.7 12,956 20.19 1,308,088 20.42 19.98 7,857 354 7,57 1928 43,735 42,432 163.3 14.477 17,99 1,302,036 19,73 18.98 8,419 479 7,9	1921	29, 716	28, 678	132.5	7.945	17. 01	675, 773	18. 92	17. 92	6.348	380	5, 980
1924. 40, 692 39, 503 165. 0 13, 680 22. 91 1, 561, 022 24. 74 24. 21 8, 240 328 7, 9 1925. 45, 972 44, 390 173. 5 16, 105 19. 59 1, 577, 091 20. 53 19. 71 8, 267 340 7, 9 1926. 45, 847 44, 616 192. 8 17, 978 12. 47 1, 121, 185 15. 15 14. 74 11, 299 419 10, 9 1927. 39, 479 38, 349 161. 7 12, 956 20. 19 1, 308, 088 20. 42 19. 98 7, 87 354 7, 59 1928. 43. 735 42, 432 163. 3 14, 477 17, 99 1, 302, 036 19, 73 18, 98 8, 419 479 7, 9	1922	32, 176	31, 361		9,755					5,007		4, 536
1926 46, 662 39, 503 165. 0 13, 630 22. 91 1, 561, 022 24. 74 24. 21 8, 240 328 7, 9 1925 45, 972 44, 390 173. 5 16, 105 19, 59 1, 577, 901 20, 53 19, 71 8, 267 340 7, 9 1926 45, 847 44, 616 192. 8 17, 978 12, 47 1, 121, 185 15, 15 14, 74 11, 299 419 10, 9 1927 39, 479 38, 349 161. 7 12, 956 20, 19 1, 308, 088 20, 42 19, 98 7, 857 354 7, 59 1928 43, 735 42, 432 163, 3 14, 477 17, 99 1, 302, 036 19, 73 18, 98 8, 419 479 7, 9	1923	37,000	90 904	136. 4	19 683	28.69	1, 454, 320	31.11	30. 33	5, 815	306	5, 530
1925 45, 972 44, 390 173. 5 16, 105 19. 59 1, 577, 091 20. 53 19. 71 8, 267 340 7, 9 1926 45, 847 44, 616 192. 8 17, 978 12. 47 1, 121, 185 15. 15 14. 74 11, 299 419 10, 9 1927 39, 479 38, 349 161. 7 12, 956 20. 19 1, 308, 088 20. 42 19. 98 7, 857 354 7, 5 1928 43, 735 42, 432 163. 3 14. 477 17, 99 1, 302, 036 19. 73 18. 98 8, 419 479 7, 9		40, 692	39, 503	165.0	13, 630	22.91	1, 561, 022	24. 74	24, 21	8, 240	328	7,923
1926 45, 847 44, 616 192. 8 17, 978 12. 47 1, 121, 185 15. 15 14. 74 11, 299 419 10, 9 1927 39, 479 38, 349 161. 7 12, 956 20. 19 1, 308, 088 20. 42 19. 88 7, 857 354 7, 5 1928 43, 735 42, 432 163, 3 14, 477 17, 99 1, 302, 036 19, 73 18, 98 8, 419 479 7, 9	1925		44, 390	173.5	16, 105	19. 59	1, 577, 091	20. 53	19. 71	8, 267		7, 939
1928 43, 735 42, 432 163, 3 14, 477 17, 99 1, 302, 036 19, 73 18, 98 8, 419 479 7, 9	1926		44,616		17,978		1, 121, 185			11, 299		10, 900
1925			38, 349		12, 956	20.19			19.98			7, 522
	1928	43, 735	42, 432	105. 3	14, 574	17.99	1, 302, 036	19.73	18.88	8, 418	479	7, 957
1929 44, 458 43, 242 164, 1 14, 825 16, 79 1, 244, 846 16, 60 16, 16 17, 035 396 6, 6	1929	44, 458	43, 242	164.1	14, 825	16.79	1, 244, 846	16.60	16, 16	7, 035	396	6, 650
1930 43, 339 42, 454 157, 0 13, 932 9, 46 659, 041 10, 38 10, 08 7, 133 112 7, 0	1930	43, 339	42, 454	157.0	13, 932	9.46	659, 041	10.38	10.08	7, 133	112	7, 029
1931 39, 109 38, 705 211. 5 17, 096 5. 66 483, 627 6. 34 6. 20 9, 193 138 9, 0	1931		38, 705		17.096		483, 627	6.34		9, 193		9, 081
1932 36, 542 35, 939 173. 3 13, 002 6. 52 424, 006 7. 37 7. 26 8, 895 136 8, 7 1933 40, 852 13 29, 978 208. 5 13, 047 9, 72 634, 396 11, 09 10, 92 7, 964 14 156 7. 8	1932		35,939		13,002							8, 766
1933 40, 852 13 29, 978 208. 5 13, 047 9. 72 634, 396 11. 09 10. 92 7, 964 14 156 7, 8 1934 18 28, 412 27, 515 169. 2 9, 731 12. 60 612, 802 11. 09 10. 92 7, 964 14 156 7, 8	1934 18		27, 515				812, 802	11.09	10.92	1, 904	100	7, 815
	-20		,		0,,,,,		0.2,002					

15 Preliminary.

See footnotes 1 to 9 on page 425.

12 Average for 9 months only. Exchange closed Aug. 1-Nov. 17, on account of war.

13 Area in cultivation July 1 less removal of acreage reported by the Agricultural Adjustment Administration, less abandonment on area not under contract.

14 Includes imports for consumption, January-June 1934, reexports not considered.

Bureau of Agricultural Economics.

Agricultural census figures in italics; other acreage, yield, and production figures are estimates of the Crop Reporting Board. Production figures conform with census annual ginning enumerations, with allowance for cross State ginnings, State figures rounded to thousands and added for United States total. Since the 1933 Yearbook was published, acreage and yield for all years have been revised to the level of the 1930 census, and cotton grown in Baja California, Mexico, ginned in California, from 1913 to 1924 has been excluded.

Table 114.—Cotton: Acreage, yield, production of lint in 500-pound gross-weight bales, and weighted average price per pound received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harv	ested	Yie	ld per a	cre	Pr	oductio	n i	Price for crop of—	
State	A ver- age, 1928- 32	1933	1934 2	Aver- age, 1923- 32	1933	1934 2	A ver- age, 1928- 32	1933	1934 2	1933	1934 3
Missouri Virginia North Carolina South Carolina Georgia Florida Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas New Mexico Arizona California All other	1,000 acres 374 79 1,432 1,879 3,166 124 1,065 3,373 3,977 3,382 1,847 3,707 15,598 122 186 222 20	1,000 acres 356 65 1,090 1,379 2,147 94 84 2,378 2,859 2,683 1,295 11,488 96 118 208 23	1,000 acres 320 59 970 1, 282 2, 144 769 2, 164 2, 602 2, 247 1, 191 2, 740 10, 454 93 133 223 27	Lb. 256 270 289 208 176 124 196 172 191 188 192 149 139 318 322 386 227	Lb. 340 275 300 255 246 141 240 195 194 193 176 208 185 468 391 500 311	Lb. 366 316 320 259 221 142 256 213 211 186 57 110 474 396 548 301	1,000 bales 229 45 752 856 1,241 35 4,255 1,359 1,351 745 1,109 4,580 90 128 200 11	1,000 bales 253 37 684 735 1,105 28 443 969 1,151 1,266 4,428 96 217 15	1,000 bales 245 39 650 695 28 412 965 1, 145 875 488 325 2, 395 92 110 255 17	Cents 9. 11 9. 74 10. 52 10. 35 9. 70 9. 24 9. 62 10. 20 10. 05 9. 90 9. 67 9. 12 9. 42 9. 83 11. 80 10. 42 9. 52	Cents 12.3 12.4 12.7 12.8 12.2 12.8 12.5 12.5 12.6 12.9 12.9 12.9
United States	40, 554	29, 978	27, 515	169. 9	208. 5	169, 2	14, 666	13, 047	9, 731	9. 72	12.6
Baja California (old Mexico)	101	54	59	242	159	154	48	18	19		

Compiled from reports of the Bureau of the Census. Slight differences from census figures on ginnings are due to ginnings in one State of cotton grown in another.
 Preliminary estimate of the Department of Agriculture.

3 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 115.—Cotton: Acreage and production in specified countries, average 1925-26 to 1929-30, annual 1932-35 to 1934-35

		Acre	eage			Produ	etion	
Country	A verage, 1925-26 to 1929-30	1932–33	1933–34	1934-35 1	A verage, 1925–26 to 1929–30	1932–33	1933–34	193 4-3 5 ¹
United States	Acres 42, 606, 000 471, 632	Acres 35, 939, 000 192, 377	A cres 29, 978, 000 424, 288	Acres 27, 515, 000 417, 903	252, 805	101,001	Bales 2 13, 047, 000 260, 426	Bales 2 9, 731, 000 208, 625
Venezuela Colombia Peru Ecuador	49, 273 304, 302				3 33, 095 14, 305 244, 627 5, 778	9, 916 242, 000 3, 887	276, 000 5, 188	7, 782
Brazil Boiivia Paraguay	1, 306, 000 5, 601 5 23, 691		2, 519, 000		547, 364 \$ 2, 139 \$ 12, 328 115, 370			
Argentina	241, 073 697 130, 269	1			397 6 22, 324 3 351			
Puerto Rico	10, 020				2,030 3 6 774 4,288 7 3,300			

¹ Preliminary.
2 Bales of 478 pounds net.
3 Average for 4 years.
4 Average for 3 years.
5 Exports.
7 Estimate for 1 year.

Table 115.—Cotton: Acreage and production in specified countries, average 1925-26 to 1929-30, annual 1932-33 to 1934-35—Continued

		Acr	eage			Produ	iction	
Country	Average, 1925-26 to 1929-30	1932-33	1933–84	1934–35 1	Average, 1925-26 to 1929-30	1932–33	1933–34	1934–35 1
Yugoslavia	Acres	Acres	Acres	Acres	Bales 2 392	Bales 2 542	Bales 2	Bales 2
Greece	1, 763 39, 819 10, 867	2, 251 50, 000 20, 000	71, 000 49, 000	109, 000 82, 000	15, 016	22,000 6,005	32, 000 18, 000	50, 00 29, 10
Bulgaria Malta Spain	993 13, 643	67	l		427 2,974	5, 000		
Algeria	15, 138	20,000	19, 000		6, 176			
Algeria Morocco (French) French West Africa:	1, 480							
Dahomey Ivory Coast French Guinea Senegal French Sudan Upper Volta French Togo	5 149, 376				6,344 6 7,646	3, 000 6, 964	3, 200	
French Guinea	3 18, 841				3 2, 406			
Senegal	47,690				1,695			
Upper Volta	° 158, 201				5, 776			
French Togo					7, 732			
Nigeria French Equatorial Africa					20,040	18,600		
Anglo - Egyptian Su-	1, 828, 000	1, 135, 000	1, 873, 000	1, 798, 000	⁵ 822 1, 587, 000		20, 800 1, 777, 000	1, 617, 00
dan Italian Somaliland	269, 200	325, 000	333, 000	352, 000	125, 547	121,000	135, 000	
Niger Territory	* 18, 162		333, 000 12, 000		4, 005 1 764		100,000	
Eritrea (8 6, 487	5, 869	12,000		1, 624	784		
Gold Coast	3 94 950				3 209			
Belgian Congo Kenya	1				25, 587 1, 299	2.542	3, 347	
Kenya Uganda Angola	615, 441	1,071,521	1, 091, 000	1, 181, 000	131, 257 6 3, 022	247, 000	3, 347 218, 000	
Pangan vika					20, 537	15,096		
Nyasaland Northern Rhodesia ⁸ Southern Rhodesia	\$ 23, 805	33,840			4, 360	4, 293		
Southern Rhodesia	2,500 16.706				126 1,508			
MozambiqueUnion of South Af-					9, 094			
fricaCyprus	64, 491 11, 342				9 11, 302	1, 500 937	2, 186	
Cevlon	1, 631				2, 532 192	937		
Turkey (Asiatic) Syria and Lebanon	1, 631 334, 230 54, 977	358, 000 19, 000	400, 000	491, 000	92, 928 9, 886	28, 000 4, 000	23, 098 4, 000	78, 4
Union of Soviet Socialist Republics.	1,991,000	5, 139, 000	4, 858, 000	4, 843, 000	1, 012, 000 2, 977	1, 778, 000		1
fraq fran	7 15, 000				05 160	342 10 100, 000	¹⁰ 100, 000	
India China ¹¹	26, 192, 000 4, 480, 000	22, 483, 000 5, 630, 000	23, 739, 000 6, 142, 000	6, 747, 000	95, 160 4, 724, 000 2, 009, 000	3, 896, 000 2, 261, 000	4, 159, 000 2, 726, 000	2, 928, 0
Japan Chosen Manchuria	2, 857 495, 232	393, 000	433, 000	i	1.090	136, 000		l
French Indo-China	4 42, 960		141,000	190,000	47, 120	6, 685		
Netherlands Indies	21, 708	25, 187			47, 120 4, 708	2, 958		
Siam Australia	4 42, 960 21, 708 8, 951 22, 895				3, 244		18, 533	
New Hebrides					7, 311 2, 505	868	10,000	
Estimated world total,								
including	83, 080, 000	76, 700, 000	74, 400, 000		26, 720, 000	23, 700, 000	26, 100, 000	23, 000, 0

Preliminary.

Bales of 478 pounds net.

Average for 4 years.
Average for 2 years.
Average for 3 years.
Exports.

⁵ Production has been discontinued with the exception of a few experimental plots under Government supervision.

Includes Swaziland.

¹⁹ From reports of the Chinese Cotton Statistics Association. Figures represent the crop in the most important cotton Provinces where the commercial crop is grown.

Bureau of Agricultural Economics; from official sources, International Institute of Agriculture and estimates of the Bureau of Agricultural Economics except as noted.

Data for crop year as given at the head of table are for crops harvested between Aug. 1 and July 31.

Table 116 .- Cotton: Production, world and selected countries, 1909-10 to 1934-35

	Esti-	Esti-		Produc	tion in s	elected co	ountries		Esti- mated
Crop Year	mated world total exclud- ing China	mated world total includ- ing China	United States	India	Egypt	China 1	Brazil	Russia	world total com- mer- cial crop 2
1909-10 1910-11 1911-12 1911-13 1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1922-23 1922-24 1922-25 1922-26 1925-27 1927-28 1928-29 1928-29 1928-29 1928-29 1928-29 1930-31 1930-31 1931-32 1932-33 1933-34 1934-35-5	21, 100 22, 200 24, 200 17, 800 18, 366 17, 608 17, 841 18, 782 19, 217 13, 886 16, 982 21, 707 17, 707 22, 822 25, 768 24, 334 24, 384 23, 570 21, 439 23, 571 21, 439 23, 374	1,000 bates 3 19,900 19,700 20,900 21,100 15,400 19,700 25,000 27,900 26,800 26,800 26,800 27,500 28,400 27,900 28,400 28,000 21,300 21	13, 703 14, 153 16, 112 11, 172	1,000 bates 3 3,998 2,730 3,702 4,239 4,239 4,239 3,128 3,759 3,328 4,833 4,833 4,832 4,205 4,320 4,205 4,205 4,333 4,838 4,83	1,000 bules 3 1,055 1,550 1,554 1,558 1,588 1,387 1,048 1,304 1,305 1,251 1,251 1,353 1,506 1,586 1,586 1,261 1,672 1,672 1,1028 1,1028 1,1028 1,1028 1,1028 1,1028 1,1028 1,1028 1,1028 1,1028	1,000 bates 3 1,534 2,092 2,509 2,518 1,883 1,514 2,318 1,993 2,174 2,102 1,742 2,466 2,166 2,166 2,166 2,250 1,782 2,261 2,726 2,726	1,000 bales 3 324 357 360 4187 4487 414 406 461 476 504 553 602 512 509 446 553 471 576 793 414 476 471 476 476 477 477 448 488 498	1,000 bales 3 	1,000 bates 4 16, 211 18, 022 1, 269 20, 976 21, 618 23, 766 18, 146 18, 751 20, 222 19, 032 23, 533 23, 533 25, 532 25, 451

¹ From reports of the Chinese Cotton Statistics Association. Figures represent the crop in the most important cotton-producing Provinces where the commercial crop is grown. Most of the cotton produced in other Provinces is used for home hand-loom consumption.

2 Figures as reported by the U.S. Bureau of the Census, including the cotton destined to enter commercial channels for factory purposes. Estimates of the commercial crop in China are included.

Bureau of Agricultural Economics; from official sources, International Institute of Agriculture, and estimates of the Bureau of Agricultural Economics, except as noted.

The crop year is from Aug. 1 to July 31. For the United States prior to 1914 the figures apply to the year beginning Sept. 1.

Table 117.—Cotton: Monthly marketings by farmers, 1924-25 to 1933-34 1

					Perc	entage	es of sa	les dur	ing—				
Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Year
1924-25	Per- cent 3.3 6.5 2.7 6.6 4.6 5.7 7.7 2.9 4.5	Per- cent 15. 2 19. 3 15. 2 20. 0 15. 6 18. 2 19. 0 13. 4 14. 3 17. 4	Per- cent 25. 2 23. 1 22. 0 23. 8 24. 8 28. 3 25. 6 23. 9 22. 6	Per- cent 22.3 17.6 19.5 17.3 20.8 20.6 20.3 19.9 20.2	Per- cent 14.5 12.0 12.5 9.7 12.8 11.8 11.8 10.7	Per- cent 7.0 6.5 6.3 4.2 5.4 4.2 5.4 4.2 8.3 9.3 4.3	Per- ceni 5.3 4.2 5.8 4.0 4.0 2.6 2.5 3.3 3.5	Per- ceni 3.4 3.1 5.2 4.8 2.4 2.4 3.4 3.4 4.8 4.8	Per- cent 1.6 2.3 3.8 1.1 1.8 1.4 2.6 4.9 2.6	Per- cent 10 17 3.1 2.7 1.6 1.1 1.7 5.7	Per- cent .6 21 25 23 1.9 1.8 1.8 3.6	Per- cent 666 1.6619212265	Per- cent 100. 6 100. 6 100. 0 160. 0 160. 0 160. 0 100. 0

¹ As reported by about 7,500 cotton growers, supplemented by records of State weighers, cooperative associations, and cotton dealers.

⁸ Bales of 478 pounds net.

⁴ American in running bales and foreign in bales of 478 pounds net, beginning with 1922–23. From 1909–10 to 1916–17, inclusive, bales of 500 pounds net, and from 1917–18 to 1921–22 in bales of 478 pounds net.

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 259.

Table 118.—Cotton: Supply and distribution, United States, 1913-14 to 1933-34

	· · · · · ·		Supply					Distril	oution		-
Year beginning August	from p	v-over revious son	Produc-	Im- ports	Total supply	Consur	nption	Ex-	hand sof y		Total dis-
	For- eign	Total	tion ,	ports	suppry	For- eign Total		ports	For- eign	Total	tribu- tion 2
1913-14 1914-15 1916-16 1916-17 1917-18 1918-19 1919-20 1920-21 1922-23 1922-23 1922-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1933-34	212 143 111 83 284 174 167 196 116 106 129 99 111	1,000 bales 1,511 1,366 3,936 3,140 2,720 3,450 4,287 3,563 6,534 2,832 2,325 1,550 1,610 3,543 3,762 2,312 4,530 6,370 9,678 8,165	1,000 bales 13,983 15,908 11,068 11,364 11,326 11,326 13,271 13,639 16,123 17,978 9,729 10,171 13,639 16,123 14,297 14,548 13,756 16,629 12,710 12,664	1,000 bales 261 382 438 292 221 202 700 226 363 470 292 313 326 401 338 458 458 132 130	1,000 bales 15, 755 17, 654 14, 189 15, 558 16, 313 17, 060 14, 875 13, 031 12, 788 15, 508 18, 059 16, 883 17, 291 17, 238 18, 394 23, 131 22, 518 20, 977	1,000 bales 194 222 317 318 184 176 216 227 344 328 276 280 309 299 313 302 179 122 133 148	1,000 bales 5,577 6,398 6,789 6,566 5,766 6,420 4,893 5,910 6,666 5,681 6,456 7,190 6,834 7,091 6,106 5,263 4,866 6,137 5,700	1,000 bales 9,142 8,323 5,390 4,288 5,590 4,288 5,595 6,545 5,745 6,184 4,823 5,656 8,005 110,927 7,540 8,708 8,419 7,534	1,000 bales 73 145 212 143 111 83 284 174 166 116 106 129 99 111 182 209 107 97 84	1,000 bales 1,366 3,936 3,140 2,720 3,450 4,287 3,563 6,534 2,832 2,325 1,556 1,556 1,556 2,536 2,536 2,536 2,536 2,536 2,536 2,536 2,774 4,530 6,370 8,165 7,744	1,000 bales 16,085 17,854 15,434 14,809 14,304 15,645 16,528 17,172 12,893 18,050 12,893 18,050 17,472 17,326 18,393 23,252 22,721 20,978

¹ Production is expressed in running bales in this table and therefore the figures are not the same as those shown in tables where bales of 500 pounds gross weight are used. Consumption and carry-over statistics for American cotton are available only in running bales, and therefore production and exports are shown in running bales.

1 Total distribution usually is greater than total supply due principally to the inclusion, in all distribution items, of the "city crop", which consists of rebaled samples and pickings from cotton damaged by fire and

weather.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census. Quantities are in running bales, round bales counted as half bales and foreign in 500-pound bales.

Table 119.—Cotton: Consumption by mills, United States, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Total
1925-26	1,000 bales 451 500 634 526 559 353 425 404 589 421	1,000 bales 483 571 628 492 546 393 464 493 499 296	1,000 bales 544 568 614 616 640 443 461 502 504 520	1,000 bales 544 584 627 611 541 415 425 503 475	1,000 bales 576 603 539 533 453 406 415 440 348 414	1,000 bales 582 603 586 668 576 450 435 470 508 547	1,600 bales 565 590 573 595 494 433 451 478 478	1,000 bales 636 693 581 632 508 491 489 496 544 481	1,000 bales 578 618 525 632 532 509 367 470 513 463	1,000 bales 516 630 577 669 473 465 332 620 519	1,000 bales 519 660 510 570 405 454 323 698 363	1,000 bales 462 570 440 547 379 451 279 600 360	1,000 bales 6,456 7,190 6,834 7,091 6,106 5,263 4,866 6,137 5,700

¹ Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census. Data for earlier years in 1923 Yearbook, table 264.

Quantities are in running bales, round counted as half bales and foreign in 500-pound bales.

Table 120.—Cotton: Grade, staple length, and tenderability of crop and carry-over, United States, 1930-31 to 1933-34

	Chille		, 1000	-31 10	1900-	9.4			
Item		Cro	p			Carry	-over Au	g. 1 ¹	
	1930-31	1931-32	1932-33	1933-34	1930	1931	1932	1933	1934
Total 2	1,000 bales 13, 755. 5	1,000 bales 16, 628. 9	1,000 bales 12, 709. 6	1,000 bales 12,660.0	1,000 bales 4, 321. 7	1,000 bales 6, 262. 7	1,000 bales 9,576.8	1,000 bales 8,079.5	1,000 bales 7,645.1
Total American up- land Total American-Egyp- tian	13, 732. 2 23. 3		12, 701. 3 8. 3	12, 650. 3 9. 7		6, 246. 0	9, 560. 3	8, 069. 7	7, 638. 1
Grade (American unland):	20. 3	13. 7	8. 3	9. 7	8.1	16. 7	16. 5	9.8	7.0
Extra White: Above Good Mid- dling Good Middling	1.0	. 6	1.8	.4	.3			.1	.3
Strict Middling Middling Strict Low Middling- Low Middling	4.8	62, 2 29, 7	99. 6 28. 9	597. 5 422. 7 187. 2 41. 2	29.3 15.4 5.9 1.4	16.8 6.6	8.9 2.5	34.2 32.2 14.1	460. 7 81. 4
Below Low Middling White: Middling Fair Strict Good Mid-	18.6	4.3	1.8	.8	.5	.1	.1	.9	4.1
dling Good Middling Strict Middling Middling Strict Low Middling. Low Middling.	13. 0 892. 3 4, 364. 0 4, 211. 7 1, 749. 7 576. 9	940. 0 5, 873. 4 5, 233. 2 1, 759. 2	251. 3 3. 147. 6	273.6	159, 7 872, 6 1, 279, 6 583, 6	219. 9 1, 536. 3 2, 077. 8 928. 3	454. 7 3, 183. 5 3, 292. 2 1, 083. 3	202. 1 1, 931. 7 2, 801. 6 1, 210. 1	125. 2 1, 079. 4 1, 438. 7 686. 5
Strict Good Ordin- ary Good Ordinary Spotted:	114, 6 20, 0	421. 9 160. 8		51. 8 10. 7			148. 6 98. 5	144. 7 82. 6	72. 5 51. 8
Good Middling Strict Middling Strict Low Middling. Strict Low Middling. Low Middling Yellow Tinged: Strict Good Mid-	557.0	428. 5 247. 9 185. 2	1, 054. 673. 6 217.	2, 138. 0 1, 030. 5 220. 8	160. 6 210. 1 3 136. 6	383. 0 348. 2 95. 3	392. 3 244. 3 59. 0	547. 3 385. 9 101. 3	478. 1 378. 8 112. 5
Good Middling Strict Middling	20.7	1.6 4.5 7.3 8.1	10. 9. 9.	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7	16.	18.3 21.3 11.4	16. 5 19. 5 11. 3	14. 2 16. 0 8. 3	22.9 27.5
Midding. Strict Low Middling. Low Middling. Light Yellow Stained: Good Middling. Strict Middling. Middling.		.1			2 1 2 1. 2 3.	1 1.	*	1 .1	.2 .1 .2
Yellow Stained: Good Middling Strict Middling Middling		1		-	6.	6	1		.1 .4 1.8
Gray: Good Middling Strict Middling Middling Blue Stained:	3.5 1.0	2 6.9	1 5.	2 9 L	8 1. 1 1.	0	5 2.	2.1	2.7 2.7
Good Middling Strict Middling		-1 -:	l	_	i	i	1		.2
Middling No grade 3 Staple length (American up-	12.		34.	8 28.	- -	b) .:	57.		
land): Shorter than ½ inch ½ and ²¾2 inch 1¾4 inch 1 and 1¾2 inches 1¼4 and 1¾2 inches 1¼4 and 1¾2 inches 1¾4 and 1¾2 inches 1¾4 inches and 1¾4 inches 1¼4 inches and 10½2 inches	3, 421. 1, 725. 970. 393. 60.	6 4, 511. 9 2, 557. 9 1, 087. 3 590. 8 224.	3 4,786. 9 3,671. 1 1,822. 8 871. 0 622. 6 84.	5 4,486. 0 3,997. 0 2,020. 8 820. 1 640. 5 144.	1 1,445. 5 825. 3 783. 0 389. 7 283. 7 115.	6 2, 615. 4 1, 528. 0 849. 3 414. 4 269. 8 89.	2 2,704. 2 1,657. 8 754. 5 546. 7 174.	6 2,503. 0 2,199. 6 1,774. 5 671. 7 562. 0 143.	O 111.0
Tenderability: 4 Total tenderable Total untenderable	11, 623. 2, 109.	2 14, 833. 0 1, 781.	9 11, 489 . 3 1, 212.	1 11, 785. 2 864.	8 3, 416. 5 897.	3 5, 543. 702.	3 8,882. 7 677.	7 7, 437. 6 632.	6, 969. 8 668. 3

Carry-over of foreign cotton not included (see table 118).
 Report of Bureau of the Census.
 Includes bales not otherwise classified above.
 According to sec. 5, United States Cotton Futures Act.

Bureau of Agricultural Economics; see Statistical Bulletins 40 and 47 and subsequent reports for details.

Table 121.—Cotton: Mill consumption of American and other growths in the world. United States, and foreign countries, 1913-14 to 1933-34

		World		T:	nited Sta	tes	For	eign coun	tries
Year beginning August ¹	All growths	Amer- ican ²	Other growths	All	Amer- ican ²	Other growths	All growths	Amer- ican 2	Other growths
1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1920-21 1922-23 1922-23 1922-24 1924-25 1925-26 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1931-32 1931-32	21, 978 21, 109 18, 516 16, 705 19, 905 19, 990 21, 325 19, 982 22, 642 23, 930 25, 869 25, 285 24, 878 22, 402 22, 402 22, 896	1,000 bales 3 13, 825 13, 249 12, 561 10, 871 9, 909 11, 898 10, 268 12, 209 12, 449 10, 917 13, 311 14, 010 15, 576 15, 226 11, 113 12, 506 11, 113 12, 506	1,000 bales 3 8, 375 7, 422 8, 939 8, 548 7, 645 6, 676 7, 402 6, 637 9, 931 9, 920 10, 556 11, 289 10, 581 11, 644	1,000 bales 3 5,577 5,577 6,398 6,789 6,566 6,420 4,893 6,666 6,193 6,456 7,091 6,834 7,091 6,263 4,893 6,19	1,000 bales 3 5, 383 5, 375 6, 470 6, 382 5, 590 6, 003 4, 677 6, 176 6, 322 5, 917 6, 176 6, 535 6, 783 5, 904 4, 744 4, 744 4, 744 4, 704 5, 552	1,000 bales 3 194 222 317 319 184 176 417 216 297 344 323 276 280 310 299 313 303 179 123 148	1,000 bales 3 16, 623 15, 574 15, 580 14, 320 11, 950 10, 939 12, 880 14, 659 14, 301 16, 449 17, 474 18, 679 18, 451 18, 772 17, 139 18, 849 19, 624	1,000 bales 3 8, 442 7, 874 6, 958 6, 091 4, 489 5, 596 6, 124 7, 394 7, 834 8, 041 8, 448 7, 218 6, 029 7, 762 8, 401 8, 127	1,000 bales 3 8, 181 7, 200 8, 622 7, 461 6, 620 6, 985 6, 421 7, 484 8, 535 8, 737 9, 9410 10, 243 11, 154 11, 110 10, 268 11, 497

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census except consumption figures for American cotton in foreign countries, which are compiled from the Cotton Yearbook of the New York Cotton Exchange, 1934, p. 37.

The figures for the consumption of "other growths" in the world and in foreign countries were computed

by deduction.

Table 122.—Cotton: Average price per pound received by producers. United States. 1925-26 to 1934-35

Year	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr.: 15	May 15	June 15	July 15	Weight- ed aver- age
1925-26	Cents 23. 4 16. 1 17. 1 18. 8 18. 0 11. 4 6. 3 6. 5 8. 8 13. 1	Cents 22. 5 16. 8 22. 5 17. 6 18. 2 9. 9 5. 9 7. 2 8. 8 13. 1	Cents 21, 5 11, 7 21, 0 18, 1 17, 5 9, 2 5, 3 6, 4 9, 0 12, 5	Cents 18. 1 11. 0 20. 0 17. 8 16. 2 9. 6 6. 1 5. 9 9. 6 12. 3	Cents 17. 4 10. 0 18. 7 18. 0 16. 0 8. 7 5. 5 5. 4 9. 6 12. 4	Cents 17. 4 10. 6 18. 6 17. 9 15. 8 8. 6 5. 6 5. 6	Cents 17. 6 11. 5 17. 0 18. 0 14. 8 9. 1 5. 8 5. 5	Cents 16. 5 12. 5 17. 8 18. 8 13. 8 9. 6 6. 2 6. 1 11. 7	Cents 16. 6 12. 3 18. 7 18. 5 14. 7 9. 3 5. 7 6. 1 11. 6	Cents 16. 0 13. 9 20. 1 18. 0 14. 5 8. 8 5. 2 8. 2 11. 0	Cents 16. 1 14. 8 19. 7 17. 9 14. 0 7. 7 4. 6 8. 7 11. 6	Cents 15. 4 15. 5 21. 0 17. 8 11. 9 8. 5 5. 1 10. 6 12. 3	Cents 19. 6 12. 5 20. 2 18. 0 16. 8 9. 5 5. 7 6. 5 9. 7

¹ Preliminary.

¹ Year beginning Aug. 1 except 1913, which is the year beginning Sept 1.
² "American" cotton means cotton which is grown in the United States.
³ American in running bales and other growths in bales of 478 pounds net. Prior to 1919-20 the quantities given for world consumption of all growths were reported in bales of 500 pounds net and have been converted to equivalent 478-pound bales.

Bureau of Agricultural Economics. Based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 266.

Table 123.—Cotton, Middling, %-inch: Average spot price per pound at 10 designated markets, 1915-16 to 1933-34

Year beginning August—	Nor- folk	Au- gusta	Sa- van- nah	Mont- gom- ery	New Or- leans	Mem- phis	Little Rock	Dallas	Hous- ton	Gal- ves- ton	Average of 10 markets ¹
1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1928-29 1928-29 1929-30 1930-31 1931-32 1933-34	28. 82 28. 74 37. 32 16. 92 18. 00 25. 87 30. 15 24. 38 19. 78 14. 56 20. 17 19. 07 16. 34 10. 11	Cents 11. 56 19. 07 29. 01 29. 21 29. 21 37. 93 16. 62 17. 97 25. 92 30. 06 24. 24 19. 53 14. 37 20. 09 15. 97 9. 73 6. 08 7. 37 10. 99	Cents 11.72 19.54 29.29 30.02 38.22 17.20 18.12 25.87 30.00 24.27 19.61 14.46 20.06 18.92 15.98 9.81 6.09 7.25 10.91	Cents 11. 37 18. 86 29. 15 29. 28 37. 52 16. 37 17. 48 25. 49 29. 82 23. 71 18. 98 13. 85 19. 46 18. 42 15. 41 9. 28 5. 69 10. 64	Cents 11. 68 18. 84 28. 96 29. 87 38. 21 16. 55 17. 92 25. 94 30. 33 24. 21 19. 71 14. 74 19. 98 18. 98 16. 16 10. 08 6. 20 10. 92	Cents 11. 83 19. 08 29. 49 30. 11 38. 70 17. 20 18. 38 26. 21 30. 42 24. 19 19. 77 14. 31 19. 44 18. 31 15. 43 9. 22 5. 59 10. 66	Cents 11. 84 18. 89 29. 05 29. 75 38. 38 16. 69 18. 12 25. 78 30. 22 24. 27 19. 70 14. 29 19. 31 15. 33 9. 10 5. 48 6. 96 10. 60	Cents 11. 51 18. 43 28. 47 29. 64 23. 95 15. 79 17. 84 25. 31 29. 66 23. 91 19. 04 13. 91 19. 04 18. 19 5. 57 6. 84 10. 56	Cents 12, 00 18, 92 28, 85 30, 26 30, 28 16, 33 18, 46 30, 28 24, 50 20, 00 14, 73 19, 76 115, 89 9, 74 5, 93 10, 90	Cents 12. 06 19. 06 29. 06 30. 78 39. 41 16. 89 18. 64 26. 03 30. 48 24. 57 20. 12 14. 79 19. 84 18. 82 6. 03 7. 18 10. 90	Cents 11. 72 3 18. 96 29. 02 29. 76 38. 34 16. 66 18. 09 25. 83 30. 14 24. 22 19. 68 14. 40 19. 72 18. 67 15. 79 9. 61 5. 89 7. 155 10. 81

Bureau of Agricultural Economics; compiled from the daily reports to the Bureau from the cotton exchanges of the various markets.

Table 124.—Cotton, Middling, %-inch: Average spot price per pound at New Orleans and 10 markets combined, 1919-20 to 1934-35

Market and year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age
New Orleans: 1919-20	Cents 31. 38 34. 03 12. 78 21. 55 24. 22 26. 65 23. 07 18. 01 19. 00 18. 57 11. 56 7. 02 7. 29 9. 48 13. 28	30. 38 27. 48 19. 35 20. 74 27. 71 22. 79 16. 14 21. 53 17. 94 18. 45 10. 58 6. 20 7. 58 9. 38		39. 58 17. 65 17. 27 25. 34 33. 68 23. 95 19. 82 12. 52 19. 99 19. 00 17. 19 10. 63 6. 32 6. 12 9. 74	23. 66 19. 27 12. 22 19. 26 19. 36 17. 04 9. 65 6. 10 5. 84 9. 94	40, 28 14, 53 16, 53 27, 51 33, 93 23, 66 20, 26 13, 17 18, 72 19, 14 16, 84 9, 87 6, 50 6, 12 10, 95	39, 39 12, 85 16, 36 28, 78 31, 90 24, 61 19, 83 13, 82 17, 90 19, 07 15, 25 10, 69 5, 92 12, 07	40. 69 11. 08 16. 74 30. 43 28. 74 25. 52 14. 10 18. 94 19. 97 14. 87 10. 59 6. 74 6. 32 12. 16	41. 41 11. 17 16. 80 28. 42 30. 41 24. 52 18. 11 14. 42 20. 07 19. 23 15. 79 9. 95 6. 12 6. 88	40. 31 11. 80 19. 31 26. 63 30. 70 23. 54 18. 06 15. 68 20. 77 18. 74 15. 60 9. 08 5. 70 8. 58	40. 49 11. 03 21. 68. 28. 61 29. 43 24. 07 17. 54 16. 47 21. 10 18. 81 13. 56 5. 18 9. 83	39. 41 11. 49 22. 01 25. 73 29. 23 24. 05 18. 24 17. 63 21. 45 12. 65 9. 10. 68	38. 21 16. 55 17. 92 25. 94 30. 33 24. 21 19. 71 14. 74 19. 98 16. 16 10. 08 6. 20 7. 26
10 markets combined: 1919-20 1920-21 1921-22 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	34. 78 12. 53 21. 53 24. 22 27. 16 23. 35 17. 65 19. 16 18. 72 18. 04 11. 14 6. 57	28. 24 19. 50 20. 72 27. 67 22. 74 23. 23 15. 96 21. 19 17. 72 18. 01 10. 15 5. 83 7. 40 9. 19	22, 11 28, 90 23, 29 20, 95 12, 40 20, 35 18, 46 17, 62 9, 82 5, 75 6, 37 9, 16	17. 83 17. 43 25. 20 33. 30 23. 63 19. 92 12. 17 19. 74 18. 70 16. 75 10. 95 6. 03 9. 65	14. 63 17. 47 25. 40 34. 39 23. 40 19. 31 11. 81 18. 99 19. 07 16. 64 9. 16 5. 78 9. 87	14. 42 17. 04 27. 39 33. 69 23. 52 20. 04 12. 72 18. 44 18. 88 16. 56 9. 37 6. 15 6. 01 10. 91	12. 93 16. 73 28. 62 31. 73 24. 51 19. 63 13. 45 17. 60 18. 86 15. 11 10. 12 6. 40 5. 85 12. 02	11. 19 17. 12 30. 21 28. 54 25. 51 18. 33 13. 74 18. 76 19. 78 14. 74 10. 15 6. 44 6. 19 12. 09	11. 01 16. 92 28. 28 30. 25 24. 56 18. 05 14. 08 19. 76 18. 95 15. 40 9. 50 5. 83 6. 84	11. 55 19. 22 26. 47 30. 32 23. 61 17. 95 15. 38 20. 54 18. 23 15. 12 8. 70 5. 41 8. 49	10. 77 21. 58 28. 20 29. 37 24. 19 17. 52 16. 10 20. 82 18. 36 13. 21 8. 42 9. 28	11. 13 22. 27 25. 87 29. 32 24. 55 17. 92 17. 34 21. 25 18. 29 12. 21 8. 66 5. 54 10. 52	16. 66 18. 09 25. 83 30. 14 24. 22 19. 68 14. 40 19. 72 18. 79 9. 61 5. 89 7. 15

Bureau of Agricultural Economics; compiled from daily reports to the Bureau from the cotton exchanges of the various markets. Data for earlier years appear in previous issues of the Yearbook.

Averages of monthly averages of 10 markets.
 11 months. Comparable data not available for February.
 Excludes Savannah for February.

Table 125.—Cotton: Average discounts and premiums for staples shorter or longer than %-inch Middling spot cotton, 1924-25 to 1933-34

	Discount	78-inch, average			Premiun	as for 3—		
Year beginning August—	for 1316 inch 1	price per pound ²	¹⁵ 16 inch	1 inch	11/16 inches	1½ inches	13/16 inches	1¼ inches
1924-25 1925-26 1926-27 1927-28 1922-29 1929-30 1930-31 1931-32 1932-33 1933-34	Points 4 85 125 126 100 94 67 108 95 36 21	Cents 24, 22 19, 68 14, 40 19, 72 18, 67 15, 79 9, 61 5, 89 7, 15 10, 81	Points 4 58 76 66 37 33 45 41 21 14 19	Points 4 82 106 108 93 96 118 91 51 39 53	Points 4 176 202 159 166 177 182 154 93 75 110	Points 4 396 396 266 275 237 232 192 154 106 161	Points 4 621 635 480 409 332 347 317 244 5 201 5 270	Points 4 898 935 860 631 587 630 670 5 425 5 453

4 Hundredths of a cent a pound.

4 Memphis only.

Bureau of Agricultural Economics.

Table 126.—Cotton: Average premiums and discounts for grades 1 above and below Middling for the 10 designated spot markets, 1924-25 to 1933-34

		Premiu	ms for—		Mid- dling, 1		Discoun	ts for—	
Year beginning August—	Mid- dling Fair	Strict Good Mid- dling	Good Mid- dling	Strict Mid- dling	aver- age price per pound	Strict Low Mid- dling	Low Mid- dling	Strict Good Ordi- nary ²	Good Ordi- nary ²
1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-33	;Points 3 108 124 129 100 81 92 88 70 62 71	Points 3 84 98 106 76 60 76 70 56 50	Points 3 60 73 82 51 42 61 52 41 39 44	Points 3 37 50 58 33 38 41 31 24 25 30	Cents 24. 22 19. 68 14. 40 19. 72 18. 67 15. 79 9. 61 5. 89 7. 15 10. 81	Points 3 74 110 104 51 73 74 59 29 27 35	Points 3 171 268 238 114 153 170 138 64 55 75	Points 3 289 432 381 197 236 278 226 101 89 123	Points 3 406 563 501 284 322 376 305 138 123 165

¹ White standards and 36-inch staple.

3 Hundredths of a cent a pound.

Bureau of Agricultural Economics. Data for earlier years in 1934 Yearbook, table 126.

¹ Average of New Orleans, Houston, and Galveston, calculated from actual sales and partly estimated.

² Average for the 10 designated spot markets.

³ Average of New Orleans and Memphis for 1½6 inches and longer and for ½6 inch and 1 inch from 1924-25 to 1926-27, inclusive. Average of the 6 designated markets (New Orleans, Memphis, Houston, Galveston Dallas, and Little Rock) for ½6 inch and 1 inch from 1927-28 to 1933-34, inclusive.

² These grades untenderable according to sec. 5 of the United States Cotton Futures Act.

Table 127.—Cotton: Average spot price per pound at Liverpool, by kind and by months, 1924-25 to 1934-35

Description and year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	A ver- age
American Middling: 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35 Indian Oomra, No.	21. 09 21. 39 21. 01 14. 09 7. 91 8. 11 10. 96	26. 49 26. 25 19. 34 24. 17 20. 87 20. 93 12. 63 7. 70 8. 87 10. 67	26. 14 23. 16 14. 52 23. 36 21. 86 20. 52 11. 88 7. 65 7. 91 10. 66	26. 08 21. 40 14. 07 22. 73 21. 62 19. 61 12. 13 7. 70 7. 52 11. 24	25. 73 20. 46 13. 46 21. 98 21. 57 19. 22 10. 99 7. 38 7. 09 11. 19	26. 08 21. 68 14. 56 21. 68 21. 39 19. 00 11. 19 7. 78 7. 37 12. 43	27. 14 21. 41 15. 55 20. 54 21. 09 17. 36 12. 06 8. 25 7. 10 13. 86	20. 32 15. 65 21. 80 22. 32 16. 83 12. 09 8. 31 7. 29 13. 86	26. 85 20. 38 16. 14 22. 75 21. 57 17. 72 11. 42 7. 59 8. 01	20. 72 17. 90 23. 52 20. 62 17. 46 10. 56 6. 92 9. 88	27. 34 19. 97 18. 49 23. 70 20. 89 16. 16 10. 00 6. 43 10. 77	27. 76 19. 77 19. 43 24. 43 21. 09 15. 47 10. 26 6. 92	27. 09 21. 82 16. 57 22. 65 21. 36 18. 44 11. 61 7. 54 8. 52
1, Fine: 1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. Egyptian Sakellaridis, Fully Good	22. 26 16. 06 18. 29 16. 57 15. 73 8. 23 6. 45 7. 27 8. 78	22. 80 15. 98 20. 70 15. 65 15. 71 8. 15 6. 19 7. 87 8. 55	20. 70 13. 08 19. 79 16. 26 15. 37 8. 17 6. 50 6. 95 8. 44	18. 90 12. 69 18. 70 16. 53 14. 50 8. 68 6. 91 6. 73 8. 75	17. 57 12. 17 18. 13 16. 99 14. 32 7. 73 6. 75 6. 32 8. 53	12. 98 17. 88 16. 75 13. 87 7. 91 7. 55 6. 61 9. 38	13. 79 16. 99 16. 42 12. 09 8. 84 7. 81 6. 33 10. 09	8. 84 7. 61 6. 32 9. 87	15. 96 14. 32 18. 37 16. 14 11. 66 8. 33 6. 92 6. 44	16. 38 15. 92 18. 88 15. 33 11. 36 7. 73 6. 28 7. 96	15. 59 16. 65 19. 08 15. 69 10. 18 7. 62 5. 77 8. 70	15. 76 17. 46 19. 14 15. 73 9. 21 8. 05 6. 32	14, 58 18, 66 16, 30 12, 95 8, 19 6, 76 7, 29
Fair: 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35 Egyptian Uppers,	61. 13 32. 04 39. 13 37. 61 34. 07 23. 22 12. 15 11. 47 14. 75	56. 96 36. 32 40. 57 36. 54 34. 90 20. 89 11. 82 12. 60 14. 29	50. 91 31. 21 38. 51 36. 74 32. 16 19. 61 11. 60 11. 31 13. 85	41. 51 30. 23 37. 80 37. 35 30. 27 19. 51 11. 50 10. 58 15. 19	35. 76 27. 82 35. 48 39. 11 28. 87 16. 22 10. 05 9. 64 15. 54	37. 19 27. 96 35. 61 38. 83 29. 26 17. 01 10. 38 10. 36 17. 74	27.82 35.38 36.52 27.62 19.47	32. 32 27. 46 39. 90 38. 69 28. 02 19. 59 11. 25 10. 18 18. 81	28. 06 42. 97 37. 55 28. 79 17. 74	43. 49 35. 79 28. 37 16. 59 9. 33	34. 41 43. 03 33. 44 25. 79 15. 63	32.85 37.92 40.64 33.78 25.10 15.57	40. 47 31. 20 39. 38 36. 83 29. 44 18. 42
FullyGoodFair: 1924-25 1925-26 1925-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	37. 01 24. 78 30. 52 25. 91 22. 89 17. 92 9. 51 10. 08	36. 11 27. 09 31. 90 24. 11 23. 54 17. 09 9. 55 10. 95 12. 61	34, 36 22, 55 30, 60 25, 18 22, 45 14, 28 8, 93 10, 05 12, 10	31. 68 21. 25 30. 09 24. 84 21. 60 13. 71 8. 97 9. 76	29. 44 19. 06 28. 45 24. 84 21. 23 12. 49 8. 20 9. 18 12. 60	28. 92 20. 76 28. 06 24. 94 21. 29 12. 98 8. 81 9. 57 13. 91	27. 46 21. 41 26. 44 24. 43 20. 66 14. 46 9. 53 9. 30 15. 06	25. 18 21. 82 28. 77 26. 12 20. 52 14. 42 9. 83 9. 18 15. 05	24. 88 22. 10 30. 98 25. 08 21. 13 13. 38 9. 00 9. 81	25. 24 25. 63 31. 33 23. 38 20. 80 12. 55 8. 21 11. 96	25. 18 27. 19 30. 15 22. 97 19. 45 11. 92 7. 90	28. 98 29. 20 23. 03 19. 47 12. 25 8. 74 14. 71	29. 14 23. 55 29. 71 24. 57 21. 25 13. 95 8. 93 10. 61

Bureau of Agricultural Economics. Compiled from market reports of the Liverpool Cotton Association. Average of Friday's prices, except when Friday was a holiday, the prices on the preceding business day were used. Converted from pence to cents at the current rate of exchange. Prices in this table are revised and do not always agree with those published in Yearbooks prior to the 1933 issue.

Table 128.—Cotton: International trade, average 1925-26 to 1929-30, annual 1930-31 to 1933-34

						•				
					Year beg	ginning J	uly			
Country	Average to 19	925-26 929-30	1930	0-31	193	1–32	193	2–33	1933	-34 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES United States British India Egypt Brazil Argentina	1,000 bales 8,579 2,938 1,484 119 88	1,000 bales 399 176 0 0	1,000 bales 7, 048 3, 152 1, 284 109 107	1,000 bales 107 388 0 0	1,000 bales 8,989 1,565 1,652 40 123	1,000 bales 139 476 0 0	1,000 bales 8,647 2,126 1,274 5	1,000 bales 133 193 0 0	1,000 bales 8,366 2,585 1,875 236 92	1,000 bales 2 157 202 0
Total	13, 208	576	11, 700	496	12, 369	615	12, 174	326	13, 154	359
PRINCIPAL IMPORT- ING COUNTRIES										
United Kingdom Japan Germany France Italy China 4 Czechoslovakia Belgium Poland Canada Netherlands Austria Switzerland Sweden	0 0 325 100 1 289 4 14 0 0 2 1	3, 070 3, 061 1, 900 1, 640 1, 053 636 567 400 283 271 192 149 141 106	0 0 358 43 1 230 1 38 0 0 0 1 0 0	2, 172 2, 777 1, 645 1, 664 791 964 450 357 282 209 215 99 123 96	0 0 350 47 0 220 1 73 0 0 2 0 2	2, 475 3, 628 1, 666 787 856 1, 298 395 300 218 202 189 115 109 121	0 0 270 24 0 8 185 0 61 0 0 1 0 0	2, 460 3, 089 1, 771 1, 402 898 5 1, 036 340 368 241 191 152 88 117 109	0 0 253 12 2 202 1 114 0 0 2 1 0	2, 950 3, 563 1, 923 1, 473 1, 009 556 349 388 314 317 207 138 123 137
Total	736	13, 469	672	11, 844	695	12, 359	541	12, 262	587	13, 447

Bureau of Agricultural Economics; official sources except where otherwise noted.

Bales of 500 pounds gross weight or 478 pounds net. The figures for cotton refer to ginned and unginned cotton, but do not include linters, mill waste, cotton batting, scarto (Egyptian and Sudan), when separately stated. Wherever unginned cotton has been separately stated in the original reports it has been reduced to ginned cotton in this statement at the ratio of 3 pounds unginned to 1 pound glnned.

Table 129.—Cottonseed and cottonseed products: Cottonseed production, weighted average price per ton received by producers, farm value, quantity crushed, and products, 1919-20 to 1934-35

17 21		Cotto	nseed			Cottonseed	products 1	l
Year beginning August	Produc- tion 2	Price, Dec. 1	Farm value	Quantity crushed ¹	Crude oil	Cake and meal	Linters	Hulls
1919-20 1920-21 1921-22 1921-23 1922-23 1922-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32	1,000 short tons 5,971 3,531 4,336 4,502 6,051 7,150 7,982 5,759 6,435 6,590 6,190 7,002 5,783	Dollars 28. 79 35. 67 42. 99 32. 39 27. 28 38. 88 30. 80 36. 28 30. 33 21. 61 10. 44 9. 27	1,000 dollars 101,577 154,433 193,576 195,042 149,23 211,897 233,415 199,885 133,785 79,340 53,635	1,000 short tons 4,013 4,069 3,008 3,242 3,308 4,605 5,558 6,306 4,654 5,061 5,016 4,715 5,328 4,621	1,000 short tons 606 655 465 501 490 702 809 944 738 802 786 721 847 7723	1,000 short tons 1,817 1,786 1,355 1,487 1,518 2,120 2,597 2,840 2,093 2,282 2,282 2,265 2,402 2,093	7,000 run- ning bales 505 429 382 501 640 858 1,044 1,042 875 1,088 1,088 876 1,088	1, 143 1, 258 937 944 941 1, 331 1, 547 1, 854 1, 320 1, 368 1, 384 1, 304
1933-34 1934-35 ³	5, 804 4, 324	13. 57 35. 64	78, 783 154, 106	4, 157	652	1,889	801	1, 312 1, 103

¹ Preliminary. ² Imports for consumption.

^{3 - 3-}year average.
4 Calendar year.
5 Beginning July 1, 1932, figures do not include Manchuria.

Crushings and products are not limited to the crop specified.
 Estimated from the production of lint cotton, assuming 65 pounds of seed for each 35 pounds of lint.
 Refers to the cotton crop of the year stated.
 Preliminary.

Bureau of Agricultural Economics. Production, farm price and value, are estimates of the Crop Reporting Board; quantity crushed and products from annual reports of the Bureau of the Census, Cotton Production and Distribution.

Table 130.—Cottonseed: Production and weighted average price per ton received by producers, by States, average 1928-32, and annual 1933 and 1934

	Produc	tion ¹ from cr	op of-	Price for	crop of—
State	Average, 1928-32	1933	1934 2	1933	1934 2
Missouri. Virginia North Carolina South Carolina Georgia Florida Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas New Mexico Arizona California All other	333 380 551 16 213 558 693 600 331 493 2, 041 40 57	1,000 short tons 112 17 304 326 490 12 197 431 515 463 212 563 1,973 42 43 97 7	1,000 short tons 109 17 285 285 442 12 183 429 509 217 144 1,066 41 113 8	Dollars 11. 58 15. 95 16. 25 17. 88 17. 49 14. 40 14. 05 16. 01 15. 92 13. 70 13. 18 11. 34 11. 36 11. 238 11. 39	Dollars 32. 06 33. 66 35. 36 35. 38 36. 36 34. 22 35. 37 34. 11 36. 23 38. 66 39. 23 35. 20
United States	6, 520	5, 804	4, 324	14. 43	35. 8

¹ Computed from lint production, assuming 65 pounds of cottonseed for each 35 net pounds of lint.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 131.—Cottonseed: Average price per ton received by producers. United States, 1925-26 to 1934-35

Year	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Weight- ed average
1925-28 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 36. 52 29. 73 25. 95 36. 87 32. 69 23. 99 14. 71 9. 13 15. 60 25. 46	27. 38 34. 41 31. 02 31. 03 23. 89 8. 93 11. 28 12. 11	20. 06 36. 60 34. 08 31. 40 20. 73 7. 66 10. 45 12. 58	18. 66 37. 51 37. 17 30. 75 21. 26 11. 61 9. 54 13. 67	18. 05 37. 14 37. 74 30. 31 21. 28 11. 01 8. 87 15. 35	18. 55 37. 40 38. 05 28. 95 21. 25 10. 38 8. 81 16. 18	22. 39 37. 44 38. 73 28. 89 21. 87 10. 12 8. 91	25. 43 37. 77 39. 36 28. 63 22. 43 10. 17 9. 22	25. 80 39. 40 38. 94 29. 74 22. 85 9. 78 10. 03	37. 78 30. 61 22. 32 9. 66 12. 00	26. 27 41. 25 35. 83 29. 66 20. 32 8. 85 12. 96	26. 59 39. 27 34. 84 27. 35 19. 52 8. 61 16. 59	35. 94 35. 26 30. 43 21. 93 9. 52 10. 35

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighing State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 272.

Table 132.—Cottonseed oil, crude: Average price per pound in tanks, f. o. b. south-eastern mills, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age ¹
1925-26 1926-27 1927-28 1928-29 _ 1929-30 _ 1930-31 1931-32 _ 1932-33 _ 1933-34 _ 1934-35	Cents 10.88 8.70 6.76 3.71 4.48 5.65	Cents 9. 14 8. 19 9. 25 8. 16 7. 66 6. 48 3. 60 3. 71 3. 57 6. 55	Cents 8. 55 7. 44 9. 45 8. 14 7. 33 6. 14 3. 25 3. 23 7. 20	Cents 8, 90 6, 64 9, 05 8, 24 7, 38 6, 35 3, 80 3, 58 7, 91	Cents 8. 98 6. 36 8. 72 8. 38 7. 26 6. 12 3. 33 2. 72 3. 43 8. 94	Cents 9. 75 6. 94 8. 48 2 8. 63 7. 24 6. 18 3. 24 2. 90 3. 56	Cents 10. 71 8. 20 7. 75 9. 12 7. 40 6. 37 3. 22 2. 74 4. 18	Cents 11. 00 7. 73 8. 44 9. 00 7. 13 6. 75 3. 12 2. 88 4. 44	Cents 11. 22 7. 33 8. 75 8. 37 7. 48 6. 72 2. 61 3. 18 4. 40	Cents 12.17 7.74 8.88 7.94 7.32 6.38 2.56 4.16 4.23	Cents 8. 04 6. 95 6. 27 2. 96 4. 38 4. 68	7.00 3.24 5.45 5.10	Conis 10. 05 7. 77 8. 75 8. 44 7. 29 6. 41 3. 19 3. 51 4. 09

Bureau of Agricultural Economics; compiled from the Oil, Paint, and Drug Reporter; prices, 1925-26 to 1927-28 are averages of weekly quotations; beginning 1928-29, averages of daily quotations; October 1932-June 1933, from New York Journal of Commerce, average of Saturday quotations during the month. Data for 1909-10 to 1924-25 are available in the 1930 Yearbook, table 149.

Where quotations are missing, average is for months shown.
 January 1929-July 1930 quoted in barrels.
 Less than 10 quotations during the month. Other quotations were bids.

Table 133.—Cottonseed oil, prime summer yellow: Average spot price per pound, New York, 1925-26 to 1934-35 1

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver-
1925-26 1926-27 1927-28 1928-29 _ 1929-30 1930-31 _ 1931-32 _ 1932-33 1933-34 1934-35	Cents 11. 09 12. 99 9. 89 9. 27 8. 34 5. 77 4. 51 5. 16 6. 80	Cents 10. 81 11. 42 10. 74 10. 03 9. 19 8. 20 4. 39 4. 48 4. 61 7. 50	Cents 9. 86 8. 82 10. 83 9. 84 9. 23 7. 60 4. 48 3. 97 4. 19 8. 10	Cents 10. 32 8. 20 10. 55 9. 69 9. 01 7. 57 4. 55 3. 75 2 4. 50 9. 20	Cents 10. 47 8. 22 10. 06 10. 21 8. 77 7. 28 4. 09 3. 48 4. 30 10. 10	Cents 11. 33 8. 50 10. 02 20. 33 8. 46 7. 20 4. 08 3. 62 4. 70	Cents 11. 28 9. 31 9. 27 10. 88 8. 46 7. 29 3. 95 3. 53 5. 10	Cents 12. 24 9. 39 9. 64 10. 74 8. 41 7. 58 3. 96 3. 77 5. 10	Cents 12. 38 8. 78 10. 04 10. 11 8. 80 7. 55 3. 46 4. 08 5. 20	Cents 14, 48 9, 09 10, 52 9, 75 8, 76 6, 99 3, 18 4, 99 5, 00	Cents 15. 38 9. 19 10. 22 9. 64 8. 23 6. 76 3. 34 5. 48 5. 30	Cents 14, 99 9, 57 10, 03 9, 62 7, 99 7, 00 3, 83 6, 17 5, 90	Cents 12. 05 9. 46 10. 15 10. 02 8. 72 7. 45 4. 09 4. 32 4. 92

¹ Prices through July 1930 quoted in barrels; beginning August 1930, quoted in tanks. ² From November 1933 prices from Bureau of Labor Statistics.

Table 134.—Cottonseed oil: International trade, average 1925-29, annual 1930-33

Calendar year

Country	Average	, 1925–29	19	30	19	31	19	32	193	33 1
	Ex- ports	Im- ports	Ex- ports	lm- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES United States United Kingdom Egypt Peru Brazil Algeria Total PRINCIPAL IMPORTING COUNTRIES	46, 146 22, 724 9, 526 352	1,000 pounds 0 18,657 80 0 23 29 18,789	24, 717 6, 947 2, 314 43	35, 584 0 0 2 48	22, 578	1,000 pounds 0 13,803 1 0 2 2 2 13,808	1,000 pounds 55,767 38,078 18,885 911 10 2 14 113,665	13, 581 0 0 7	1,000 pounds 35, 435 21, 007 4, 414 876	1,000 pounds 0 16, 968 38 0 17, 006
Canada Germany Netherlands France Penmark Norway Cuba Malta ² Sweden Irish Free State Belgium Australia ² Greece Argentina Syria and Lebanon ² Japan Gambia ² Poland Yugoslavia Union of South Africa Uruguay Czechoslovakia Italy	283 6, 481 809 0 0 1 447 0 15 5 3 0 600 0 0 0 0 0 2	39, 439 19, 296 16, 831 7, 792 6, 624 4, 474 4, 089 3, 034 2, 356 2, 347 1, 478 1, 478 1, 325 585 498 426 298 208 208 208 208 208 208 208 208 208 20	1,472 119 57 786 0 0 0 0 103 103 0 0 2,013 0 0 0 0 0 100 103 0 103 0 0 100 100	26, 071 12, 293 810 8, 103 4, 686 1, 363 1, 824 4, 170 660 1, 465 3, 125 3, 082 4, 170 670 1, 148 715 862 47 629 15 217 290	277 51 7 484 0 0 0 0 0 2 0 0 4 4 0 0 0 0 0 0 0 0 0	17, 205 9, 216 4, 323 6, 789 5, 919 1, 565 2, 370 2, 982 544 1, 313 50 114 1, 154 385 385 385 69 235 216 439 287	0 75 45 1 517 0 0 0 0 0 90 0 0 12 0 0 0	54, 834 10, 040 1, 810 5, 223 3, 104 1, 055 4, 235 4, 128 5, 142 1, 751 1, 196 0 112 914 1, 751 397 416 718 98	0 79 271 27 618 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30, 358 6, 942 5, 144 4, 255 1, 150 592
Total	8, 676	119, 045	4, 659	71, 967	882	59, 515	740	100, 286	1,010	56, 348

Bureau of Agricultural Economics, compiled from Oil, Paint, and Drug Reporter, average of daily Data for 1890-91 to 1924-25 are available in 1924 Yearbook, table 323; and 1934 Yearbook, table 132.

¹ Preliminary. * International Yearbook of Agricultural Statistics.

^{* 4-}year average.

Bureau of Agricultural Economics; official sources except where otherwise noted. Crude and refined cottonseed oil (when separately shown) have been added without converting, as in many countries information is not available as to which it is.

Table 135.—Cottonseed meal, 41-percent protein: Average price per ton, Memphis, 1925-26 to 1934-35

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aver- age
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 44. 10 32. 10 (1) (1) (1) 36. 25 17. 30 17. 35 22. 90 34. 80	Dol. 36. 90 28. 90 37. 40 38. 40 41. 00 30. 90 13. 80 16. 75 18. 40 33. 90	Dol. 34. 40 23. 90 37. 70 43. 90 39. 30 27. 50 14. 40 16. 70 33. 90	Dol. 34. 10 23. 70 39. 60 44. 20 37. 80 27. 50 16. 60 13. 35 19. 25 37. 00	Dol. 34, 00 24, 50 41, 40 45, 60 37, 00 25, 60 14, 45 11, 80 19, 25 37, 75	Dol. 32. 60 30. 10 40. 40 90 35. 40 25. 75 13. 80 11. 85 22. 50	Dol. 31. 10 33. 50 45. 10 44. 40 33. 50 24. 90 12. 78 12. 00 24. 00	Dol. 31. 00 32. 40 49. 30 42. 70 33. 60 26. 40 12. 44 13. 10 24. 00	Dol. 31. 90 32. 50 55. 50 38. 75 36. 75 26. 25 12. 85 15. 20 22. 00	Dol. 30. 70 34. 00 61. 50 35. 50 38. 00 24. 60 12. 65 17. 50 21. 25	Dol. 31. 00 37. 40 (1) 34. 25 35. 50 22. 40 11. 50 18. 60 23. 25	Dol. 31. 10 36. 00 41. 50 38. 75 33. 60 21. 20 13. 15 27. 65 27. 05	Dol. 33. 60 30. 75 26. 60 13. 71 15. 80 21. 71

¹ Not reported.

Table 136.—Cottonseed meal, 41-percent protein: Average price per ton, bagged, at 9 markets, 1934

Market	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
Boston	25. 50 23. 50	30. 00 30. 25 29. 00 29. 30 24. 00 27. 75	30. 00 30. 15 29. 00 29. 05 24. 00 27. 90 24. 50	27. 75 28. 30 27. 65 27. 35 24. 25 27. 15	27. 20 27. 70 26. 50 26. 40 24. 30 25. 25 25. 50	24, 50 26, 70	30. 85 32. 60 31. 10 31. 40 27. 70 30. 35 30. 80	36. 65 39. 90 37. 65 39. 35 31. 75 38. 10	37. 90 39. 65 38. 30 33. 65 37. 10 37. 50	38. 60 40. 00 39. 60 39. 80 34. 90 37. 75	40. 55 42. 50 42. 75 42. 65 34. 80 41. 15 37. 75	41. 15 42. 80 43. 50 43. 05 35. 45 41. 60 40. 30	33. 21 34. 31 32. 90 33. 52 28. 52 32. 19 30. 66

Bureau of Agricultural Economics; compiled from reports made to the Bureau by its representatives in the various markets.

Table 137.—Sugar beets: Acreage, production, average price per ton received by producers, and value, United States, 1913-34

Year	Acre- age har- vested	Yield per acre	Produc- tion	Price per ton	Farm value, basis aver- age price	Year	Acre- age har- vested	Yield per acre	Produc- tion	Price per ton	Farm value, basis aver- age price
1913	1,000 acres 580 483 611 665 564 692 872 815 530 657	Short tons 10. 1 11. 6 10. 7 9. 4 9. 0 10. 0 9. 3 9. 8 9. 6 9. 8 10. 7	1,000 short tons 5,886 5,585 6,511 6,228 5,980 5,949 6,421 8,538 7,782 5,183 7,006	Dollars 5.69 5.45 5.67 6.12 7.39 10.00 11.74 11.63 6.35 7.91 8.99	1,000 dollars 33, 491 30, 438 36, 950 38, 139 44, 192 59, 494 75, 420 99, 324 49, 392 41, 017 62, 965	1924 1925 1926 1927 1928 1929 1930 1931 1931 1932 1933 1934	1,000 acres 816 648 677 721 644 688 776 713 764 983 766	Short tons 9.2 11.4 10.7 10.8 11.0 11.9 11.1 11.9 2.8	1,000 short tons 7,508 7,381 7,223 7,753 7,101 7,315 9,199 7,903 9,070 11,030 7,481	Dollars 7. 95 6. 39 7. 61 7. 67 7. 11 7. 08 7. 14 5. 94 5. 26 5. 13 5. 04	1,000 dollars 59,689 47,137 54,964 59,455 50,477 51,804 65,698 46,948 47,765 56,599 37,706

¹ Most years from 1913 to 1923 include a small unknown quantity of beets grown in Canada for Michigan factories.

Bureau of Agricultural Economics; compiled from reports made to the Bureau by its representative in the market.

² Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised, 1924-28. See introductory text.

Table 138.—Sugar beets: Acreage, yield, production, and average price per ton received by producers, by States, averages, and annual 1933 and 1934

	Acreage harvested			Yie	Yield per acre			Production			Price for crop of—	
State	Aver- age, 1927-31	1933	1934 1	Aver- age, 1924-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	1933	1934 1	
Ohio	1,000 acres 27 71 81 39 36 45 215 49 62 84	1,000 acres 42 154 88 68 75 52 209 74 108 113	1,000 acres 39 117 60 64 34 42 169 32 106 103	Short tons 9.0 7.6 12.8 10.8 9.9 11.4 12.6 11.4 10.1 8.8	Short tons 7.8 7.8 12.1 12.3 11.2 11.4 12.6 12.3 15.0 8.9	Short tons 8. 0 8. 5 9. 2 12. 3 8. 6 10. 3 9. 3 7. 8 14. 9 6. 9	1,000 short tons 231 509 1,028 439 383 516 2,725 587 697 739	1,000 short tons 328 1,203 1,067 838 837 593 2,628 912 1,618 1,006	1,000 short tons 312 999 549 786 294 434 1,566 250 1,579 712	Dol. 5. 71 5. 81 4. 50 5. 46 5. 16 5. 26 4. 62 4. 80 5. 67 5. 20	Dol.	
United States	708	983	766	10.8	11. 2	9.8	7,854	11, 030	7, 481	5. 13	- 5.04	

Table 139.—Sugar beets: Acreage, yield per acre, production, and yield of sugar per short ton of beets sliced, in specified countries, average 1921-25, annual 1933 and 1934

Countries	Acreage-			Yiel	Yield per acre			Production			Yield of raw sugar per short ton of beets sliced		
Country	Aver- age, 1921-25	1933	1934 1	Aver- age, 1921-25	1933	19341	A ver- age, 1921-25	1933	1934 1	Aver- age, 1921-25	1933	1934 2	
Canada United States United Kingdom Sweden Denmark Netherlands Belgium France Spain Italy Germany Austria Czechoslovakia Hungary Yugoslavia Rumania Poland Union of Soviet Social- ist Republics Other 5	94 83 167 170 413 184 207 982 35 629 133	983 366 125 107 117 129 675 193 202 751 115 358 108 75 107 245	1,000 acres 766 404 124 107 104 132 679 220 221 881 123 393 111 79 92 279 2,906 246	10.1 8.3 12.3 11.6 14.4 10.8 8.8 12.8 10.9 11.5 7.1 9.0	11. 2 10. 1 16. 2 18. 4 13. 0 12. 2 12. 8 11. 7 12. 6 9. 0 9. 0 9. 6 7. 5 7. 0 8. 3	9. 8 10. 0 14. 0 8. 0 14. 6 13. 4 13. 6 11. 4 12. 0 10. 8 9. 1 7. 3	70ns 293 6, 965 190 1, 160 966 2, 402 2, 173 4, 472 1, 610 2, 646 10, 595 316 7, 228 1, 985 540 702 2, 926	11, 030 3, 690 2, 027 1, 940 2, 147 1, 671 8, 224 2, 480 2, 366 9, 457 1, 177 3, 211 1, 562 748 2, 042 9, 921	4, 030 1, 731 858 1, 521 1, 771 9, 204 2, 923 10, 011 1, 479 4, 255 1, 006 573 2, 841	Lb. 2777 2988 2600 3112	2 335 2 330 2 289 2 289 2 345 3 322 2 368 3 335 3 314 3 73	207 300 259 326 325 335 301 241	
Total, countries reporting acreage and production all years. Total, all countries reporting	4, 732 5, 056	1	'	1			,,	60, 964 65, 565	, ,				

Bureau of Agricultural Economics; official sources and International Institute of Agriculture.

¹ Preliminary.
² States producing sugar beets for which figures are not shown above.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

¹ Preliminary.
2 Compiled from preliminary estimates reported by the International Association for Sugar Statistics.
3 England and Wales only.
4 1-year only, 1925-28.
5 Includes Switzerland, Bulgaria, Finland, and Australia in the 5-year average. Later years include also Irish Free State, Latvia, Lithuania, and Turkey, in which countries no sugar was produced prior to

Table 140.—Beet sugar: Production, United States, 1925-34

		Acre- age from	Beets		Sugar	Analysis of beets			ery of e from ets 6			Beet pulp produced	
Year 1	Fac- tories operat- ing	which	paid for by fac- tories	Beets sliced	pro- duced (chief- ly re- fined)3	Purity	Per- cent- age of su- crose 5	Paid for	Sliced	Paid for	Sliced	Mo- lasses pulp	Dry pulp other than mo- lasses pulp
1925	Num- ber 88	1,000 acres 653	1,000 short tons 7,423	1,000 short tons 6,993	1,000 short tons 913	Per- cent 82,84	Per- cent 14.86	Per- cent 12.30	Per- cent 13, 06	Lb. 246	Lb. 261	1,000 short tons	1,000 short tons
1926	78	687	7,300	6, 782	897	84. 03	14.94	12, 29	13. 23	246	265	74	78
1927	83	732	7,821	7, 443 6, 880	1,093	84.60	16.11	13.98	14.68	280	294	89	78 76
1928	82	646 694	7, 111	7, 117	1,061	85. 52 84. 46	16.73 15.64	14. 92 13. 74	15, 42 14, 22	298 275	308 284	64 111	75
1930	78 77	783	9, 262	8,789	1, 208	83. 79	15. 22	13.00	13.70	260	274	150	75 48 60 75
1931	66	714	7,906	7,659	1,156	84. 55	16.18	14.30	14.76	286	295	99	75
1932	75	765 985	9,080	8,856 10,778	1,357	85. 17 84. 83	16.41	14.86	15. 23	297	305	116	134
1933 1934 ⁷	84 75	765	7, 480	7, 358	1,642	84.85	16.61 16.98	14.86 15.41	15. 23 15. 66	297 308	305 313	141 130	134 92

- Year shown is that in which beets were grown. Sugar-making campaign extends into succeeding year.
 Including, in some years, a small acreage in Canada used by United States factories.
 Includes a small quantity not made from beets, and also that made at the Johnstown, Colo., molasses factory.

 - teury.

 4 Percentages of sucrose (pure sugar) in the total soluble solids of the beets.

 5 Based upon weight of beets sliced, except possibly in a very few factories.

 6 Sucrose actually extracted by factories, including that recovered from beet molasses.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. For earlier years see 1934 Yearbook, table 138.

Table 141.—Sugar: Production in continental United States, Hawaii, Puerto Rico and the Philippine Islands, 1909-10 to 1934-35

				Ca	ne (chiefly ra	w)					
Year beginning July	Total cane and beet (refined) ¹	Beet (chiefly refined)	Conti- nental United States 2	Puerto Rico	Hawaii	Philippine Islands	Tota				
1909-10 1910-11 1911-12 1912-13 1912-13 1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1922-23 1922-23 1922-23 1922-24 1922-25 1922-26 1925-26 1926-27 1927-28 1928-29 1928-29 1928-29 1928-29 1928-29 1929-30 1930-31 1931-32 1933-31	2, 108, 510 2, 108, 510 2, 324, 454 2, 324, 454 2, 324, 4018 2, 404, 018 2, 404, 018 2, 404, 209 2, 761, 304 2, 761, 304 3, 463, 853 3, 463, 853 3, 463, 853 3, 463, 853 3, 463, 853 3, 504, 202 3, 500, 386 4, 339, 332	Short tons 512, 469 510, 172 599, 500 692, 556 733, 401 722, 054 874, 256 874, 267 760, 950 760, 950 760, 960 7750, 960 1, 080, 021 1, 020, 489 675, 000 1, 081, 000 1, 083, 000 1, 083, 000 1, 083, 000 1, 083, 000 1, 083, 000 1, 101, 000 1, 128, 000 1, 128, 000 1, 156, 000	Short tons 331, 726 355, 940 360, 874 162, 573 300, 538 246, 620 138, 620 245, 840 122, 125 176, 114 327, 701 295, 735 164, 822 88, 483 139, 381 47, 166 70, 792 132, 053 200, 000 184, 000 156, 400 1522, 760	Short tons 346, 786 349, 840 371, 076 388, 004 351, 666 351, 666 351, 690 483, 391 406, 002 485, 071 489, 318 408, 325 379, 172 447, 570 680, 411 603, 240 629, 134 748, 677 586, 761 886, 110 783, 163 992, 335 816, 337	Short tons 517, 090 566, 525, 038 546, 524, 652 612, 000 646, 000 592, 763 644, 683 576, 700 600, 312 555, 727 521, 577 521, 000 537, 000 681, 000 787, 246 811, 333 896, 918 889, 101 912, 357 988, 612 1, 025, 354	Short tons 108, 254 268, 878 281, 354 346, 339 421, 192 412, 526 474, 346 486, 913 589, 475, 325 529, 091 779, 510 607, 302 766, 902 807, 814 981, 371 958, 032 1, 174, 795	Short tons 1, 363, 856 1, 540, 579 1, 606, 342 1, 462, 178 1, 660, 302 1, 667, 247 1, 883, 910 1, 751, 079 1, 744, 060 1, 629, 836 1, 761, 079 1, 851, 215 1, 851, 215 1, 851, 225 2, 227, 404 2, 227, 429 2, 254, 535 2, 913, 807 2, 913, 807 3, 348, 617 3, 447, 438				
1933-34 ⁴ 1934-35 ⁴	5, 290, 101	1, 642, 000 1, 154, 000	205, 000 234, 000	1, 103, 822 784, 000	⁸ 952, 186 ⁸ 952, 000	* 1, 580, 443 * 824, 000	3, 841, 451 2, 794, 000				

Cane sugar, raw, converted to refined basis by multiplying by the following factors up to year 1931-32:
 United States, 0.932; Puerto Rico, 0.9393; Hawaii, 0.9358; Philippine Islands, 0.95; beginning with 1931-32,
 United States, 0.9418; Puerto Rico, 0.9460; Hawaii, 0.9617; Philippine Islands, 0.940.
 Figures for 1909-10 to 1923-24 include Louisiana and Texas; beginning 1924-25, Louisiana only.
 Preliminary.

Bureau of Agricultural Economics; production data compiled from the following sources: United States from the Department of Agriculture, except cane sugar, 1909-10 and 1910-11, which are from Willet & Gray; Hawaii from Hawaiian Sugar Planters' Association; Puerto Rico and Philippines from official sources of those islands.

Figures for earlier years appear in previous issues of the Yearbook.

Table 142.—Cane sugar: Production of Hawaii, 1924-25 to 1932-33

		Can	e used fo	r sugar	Sugar p	roduced	Sugar	Recovery of equiv- alent refined sugar from cane ground 3	
Year beginning October	Total acreage in cane	Acreage har- vested	Aver- age yield per acre ¹	Production	As made	Equiva- lent refined ²	made per short ton of cane		
1924-25	Acres 241,000 237,774 234,809 240,769 239,858 242,761 251,533 251,876 254,563	Acres 122, 000 122, 309 124, 542 131, 534 129, 131 133, 840 137, 037 139, 744 144, 959	Short tons 51. 6 53. 1 56. 1 58. 6 57. 7 58. 7 61. 9 63. 4 59. 1	Short tons 6, 297, 000 6, 495, 686 6, 992, 082 7, 707, 330 7, 447, 494 7, 853, 439 8, 485, 183 8, 865, 323 8, 566, 781	Short tons 769, 000 787, 246 811, 333 896, 918 899, 101 912, 357 988, 612 1, 025, 354 1, 035, 548	Short tons 720, 000 736, 705 759, 245 839, 336 841, 379 853, 784 925, 143 986, 083 995, 887	Pounds 244 242 232 233 241 232 233 231 242	Percent 11. 43 11. 34 10. 86 10. 89 11. 30 10. 87 11. 30 11. 87 11. 90 11. 12 11. 62	

¹ The growth of 18 to 22 months.

3 Based on tonnage of cane used.

Bureau of Agricultural Economics. Estimates of the Crop Reporting Board prior to 1926; since then data collected through the Hawaiian Sugar Planters' Association. For earlier years see 1934 Yearbook, table 140

Table 143.—Cane sugar: Production in Louisiana, 1925-34

		Cane	used for	sugar	Sugar p	roduced	ery of		Molasses made				
Year ¹	Fac- tories operat- ing	Acre- age	Average yield per acre 2	Pro- duc- tion	As made	Equiv- alent refined ⁸	equiva- lent refined sugar from cane ground4	made per ton of cane		Total 5	Per ton of sugar made	Per ton of cane used	
1925	Num- ber 91 54 46 55 65 61 59 62 61	1,000 acres 189 129 72 115 155 150 148 186 172 197	Short tons 14, 0 6, 7 13, 4 16, 2 18, 8 17, 1 15, 1 15, 2 15, 4	1,000 short tons 2,644 864 962 1,860 2,918 2,559 2,232 2,886 2,610 3,028	1,000 short tons 139 47 71 132 200 184 157 223 205 234	1,000 short tons 130 44 66 123 186 171 148 210 193 220	Percent 4. 92 5. 99 6. 86 6. 61 6. 37 6. 68 7. 28 7. 29	Lb. 105 109 148 142 137 144 141 155	1,000 gallons 12, 171 2, 782 2, 582 5, 683 14, 418 12, 032 9, 477 10, 983 11, 197	1,000 gallons 17,783 6,614 13,535 19,619 16,887 14,645 16,449 18,277	Gal- lons 128 141 93 103 98 92 93 74 80 78	Gal- lons 6. 7 7. 7 6. 9 6. 7 6. 6 6. 6 5. 7 6. 3	

Sugar campaign, usually not ended before February following season of growth of cane.
The growth of about 9 months.

¹ The growth of 18 to 22 months.
21 ton of sugar as made is assumed to be equivalent to 0.9358 ton of refined from 1924-25 to 1930-31 and 0.9617 ton of refined from 1931-32 to 1933-34, as recommended by the joint committee on sugar statistics of the Departments of Commerce and Agriculture.

^{\$1} ton of sugar as made is assumed to be equivalent to 0.932 ton of refined for 1925-30, and 0.9418 ton of refined for 1931-34, as recommended by the joint committee on sugar statistics of the Departments of Commerce and Agriculture.

⁴ Based on tonnage of cane used. ⁵ For sirup production see table 150.

⁶ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. For earlier years see 1934 Yearbook, table 141.

Table 144.—Sugar: Production, trade, and supply available for consumption in continental United States, 1909-10 to 1934-35

IN TERMS OF RAW SUGAR

	Produc-	Brought in from	Imports as	Domestic		Availabl consump	
Year beginning July	tion 1	insular possessions ²	as sugar 3		in other forms 5	Total	Per capita
1909-10 1910-11 1911-12 1912-13 1913-14 1914-15 1915-16 1916-16 1916-17 1917-18 1918-19 1917-18 1918-19 1919-20 1920-21 1920-21 1920-22 1922-23 1922-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1929-29 1930-31 1931-32 1931-32 1931-32	907, 070 1, 088, 944 1, 022, 828 1, 078, 107 1, 193, 107 1, 102, 421 903, 060 1, 346, 811 1, 424, 728 1, 021, 360 1, 111, 898 1, 226, 000 1, 121, 000 1, 123, 000 1, 234, 000 1, 234, 000 1, 234, 000 1, 234, 000 1, 282, 000 1, 400, 000 1, 822, 000 1, 970, 000	Short tons 927, 752 943, 701 1, 187, 663 1, 026, 972 936, 376 1, 098, 314 1, 102, 057 1, 203, 938 975, 684 1, 073, 944 1, 975, 735 1, 076, 342 1, 340, 867 1, 235, 049 1, 274, 870 2, 1, 859, 347 2, 051, 659 1, 374, 893 2, 377, 787 2, 603, 735 2, 811, 893 3, 074, 951 3, 207, 651	Short tons 1, 934, 279 1, 835, 279 1, 832, 424 2, 443, 252 2, 529, 963 2, 889, 067 2, 527, 984 2, 344, 816 2, 799, 962 3, 812, 955 3, 228, 279 3, 940, 777 3, 948, 957 3, 436, 955 3, 436, 955 3, 436, 957 3, 44, 115, 830 4, 115, 830 4, 115, 830 4, 115, 830 4, 115, 830 1, 123, 173 2, 416, 398 2, 321, 442 1, 710, 999 1, 356, 330	Short tons 72, 382 36, 597 50, 380 37, 190 302, 641 882, 364 676, 752 305, 429 568, 566 677, 552 319, 589 412, 196 142, 833 273, 470 325, 804 124, 555 83, 324 84, 324 87, 324 88, 324	Short tons: 24, 35, 16, 16, 16, 16, 16, 17, 11, 892 111, 892 111, 213 29, 213 12, 213 136, 747 89, 386, 24, 917 11, 568 24, 917 22, 436 24, 998 24, 818, 31, 834 29, 833 31, 834, 832 22, 437 19, 361	Short tons 3, 648, 403 3, 639, 891 3, 959, 883 4, 150, 288 4, 439, 489 4, 334, 453 4, 219, 066 4, 037, 377 4, 371, 013 5, 589, 624 5, 589, 624 5, 589, 624 5, 646, 223 6, 647, 65 6, 645, 646 6, 441, 540 6, 441, 513 6, 450, 538	Pounds 79. 78. 3 83. 9 86. 6 91. 3 87. 9. 4 83. 2 78. 5 83. 8 91. 1 97. 6 100. 5 114. 7 114. 9 101. 0 103. 4 103. 4 102. 2

IN TERMS OF REFINED SUGAR 7

1921-22 1922-23 1923-24 1924-25 1928-26 1928-27 1927-28 1928-30 1930-31 1931-32 1932-33 1932-33	941, 000 1, 159, 000 1, 184, 000 1, 204, 000 1, 379, 000 1, 304, 000 1, 567, 000	1, 260, 894 1, 161, 351 1, 198, 777 1, 547, 587 1, 859, 332 1, 588, 981 1, 930, 732 1, 858, 331 2, 239, 140 2, 451, 611 2, 675, 996 2, 924, 863 3, 048, 987	3, 686, 397 3, 805, 745 3, 214, 883 3, 674, 563 3, 634, 323 3, 196, 443 3, 851, 311 2, 641, 702 2, 261, 187 2, 186, 307 1, 611, 418	1,009,377 383,439 142,217 254,391 303,073 115,865 107,704 129,846 81,167 71,884 55,541 41,439 60,353	29, 182 11, 682 22, 943 20, 911 23, 298 24, 514 27, 805 29, 726 40, 375 30, 781 26, 862 21, 131 18, 234	5, 234, 638 5, 522, 600 5, 223, 115 6, 118, 848 6, 210, 284 6, 103, 656 6, 150, 686 6, 734, 070 5, 963, 307 5, 969, 133 6, 083, 900 6, 040, 711 6, 082, 762	96. 0 99. 8 94. 0 107. 3 107. 4 104. 0 103. 3 111. 6 97. 5 96. 9 97. 8 96. 5
1932-33 1933-34 1934-35	1, 835, 000 1, 835, 000 1, 374, 000	3, 048, 957	1, 277, 392	60, 353			

Bureau of Agricultural Economics. Trade figures from the Bureau of Foreign and Domestic Commerce.

Beet and cane sugar only.
 Duty free, from Hawaii, Puerto Rico, and the Philippine Islands (Virgin Islands included 1917 and subsequently).
 No account taken of sugar imported in other forms. Imports from the Philippine Islands excluded,

reexports deducted.
4 Shipments to Hawaii and Puerto Rico included. Direct exports to foreign countries from Hawaii and Puerto Rico excluded.

Puerto Rico excluded.

Sugar used in the manufacture of other commod ties for export on which drawback was paid.
So account taken of stocks at the beginning or end of year.
Raw sugar converted to refined by multiplying by the following factors: 1909-10 to 1930-31, Cuba and Hawaii, 0.9358; Puerto Rico, 0.9393; Philippines, 0.95; all others (Santo Domingo, British West Indies, Louisiana, etc.), 0.932. Beginning 1931-32, Hawaii, 0.9617; Puerto Rico, Philippines and Virgin Islands, 0.946; Cuba and all others 0.9418. Use reciprocal of above factors to reduce refined sugar to raw.

Table 145.—Sugar: Production in specified countries, average 1921-22 to 1925-26, annual 1930-31 to 1934-35

BEET SUGAR IN TERMS OF RAW SUGAR

Country	Average, 1921–22 to 1925–26	1930–31	1931–32	1932-33	1933–34 1	1934–35 1
NORTH AMERICA Canada United States	Short tons 31, 908 984, 600	Short tons 53, 764 1, 298, 600	Short tons 60, 875 1, 243, 000	Short tons 75,008 1,459,000	Short tons 74,655 1,765,000	Short tons 78,000 1,241,000
Total	1, 016, 508	1, 352, 364	1, 303, 875	1, 534, 008	1, 839, 655	1, 319, 000
EUROPE						
	24, 385	526, 062	295, 038	410, 131	554, 450	
England and Wales Scotland Irish Free State	(2) (2)	1,758	679	844	3, 346	650,000
Irish Free State		28, 000 205, 760	6, 471 158, 324	28, 692 259, 425	38, 894 335, 972	82,000 298,000
Sweden Denmark Netherlands Belglum France Spain Italy Switzerland Germany Austria Czechoslovakia	142, 726 324, 273	175, 656	158, 324 127, 536	199, 737	268, 700 306, 466 267, 977 1, 039, 361 240, 000	101,600
Netherlands	324, 273 346, 094	316, 200 306, 894	181, 673 221, 113	253, 570 283, 850	306, 466	260,000 281,000
France	624, 498	1, 298, 371	963, 860	1, 103, 953	1, 039, 361	1, 153, 000
Spain	199, 414 308, 261	318, 449 474, 904	963, 860 397, 690	256, 805	240, 000	320,000
Italy	6, 698	6, 300	418, 121 6, 724 1, 759, 594	356, 130 7, 606	335, 642 9, 890	386, 000 9, 400
Germany	6, 698 1, 557, 556	6, 300 2, 808, 076	1, 759, 594	1, 199, 793	1, 575, 380	1, 760, 558
Austria	53, 192 1, 178, 534	165, 642 1, 257, 995	179, 223 903, 142	181, 791 695, 151	187, 896 568, 529	248, 768 690, 477
Hungary	139, 801	258, 265	138, 062	113, 955	197 907	240,000
Yugoslavia	63, 482	112,067	95, 132	93, 452	82, 085	70 000
Bulgaria	22, 044 76, 698	60, 205 168, 220	28, 126 59, 180	29, 505 66, 138	177, 700	127,000
Hungary Yugoslavia. Bulgaria Rumania. Poland. Latvia. Lithuania.	421, 338	855, 949	543, 977	459, 575	82, 085 45, 796 177, 700 377, 991 35, 695	2, 200 127, 000 473, 000 49, 000
Latvia	(2) (2)	8, 322 (²)	543, 977 13, 230 7, 231	459, 575 30, 760 17, 848	35, 695 8, 910	13,000
Lithuania	1,407	4,079	4, 173	6, 369	8.032	10,000
Finland Union of Soviet Socialist Republics	474,700	1.641.876	1, 681, 000	913,000	1, 194, 000	1,650,000
Turkey 3	(2)	38, 400	25, 108	30, 239	74, 100	80,000
Total	6, 140, 665	11, 037, 450	8, 214, 407	6, 998, 319	7, 924, 709	8, 955, 003
ASIA						
Japan: HokkaidoChosen	9, 995 625	26, 583 1, 109	29, 871 1, 655	29, 601 (4)	24, 960 (4)	30, 000 (4)
Total	10, 620	27, 692	31, 526	29, 601		
OCEANIA Australia	3, 021	5, 706	5, 878	5 6, 614	5 6, 614	8 7, 716
Total world beet sugar 5	7, 170, 814	12, 423, 212	9, 555, 686	8, 568, 542	9, 795, 938	10, 311, 719
,	CANDO	UGAR (R	A 3873	1	1	<u>!</u>
	CANE	· · · · · · · · · · · · · · · · · · ·			,	
NORTH AND CENTRAL AMERICA AND WEST INDIES						
United States	203, 224	183, 693	156, 617 1, 025, 354	222, 760 1, 035, 546	205, 000	234,000
Hawaii	203, 224 675, 249 499, 751	988.612	1,025,354	1, 035, 546	5 952, 186 1, 103, 822 5 5, 289	5 952, 000 5 784, 000
Virgin Islands	5, 535	783, 163 5 2, 000	992, 335 § 4, 577	816, 337 5 4, 738	1, 100, 822 5, 289	5,600
		1			I	1
Guatemala Nicaragua Salvador Mexico West Indies (British): Antigua Barbados Jamaica St. Christopher	21, 733 14, 457	⁵ 44, 628	5 39, 962	5 34, 552	5 35, 840	5 28, 000
Salvador	21, 200	51, 210	33, 289			
Mexico	179, 150	5 287, 285	⁸ 249, 708	5 231, 016	⁵ 195, 226	5 259, 041
Antigua	13, 340	5, 574	21, 468	27, 076	23, 158	20, 160
Barbados	13, 340 56, 200 39, 883	5, 574 66, 690 56, 174	92, 774	107, 544	92, 886	50, 400 84, 112
St. Christopher	39, 883 13, 985	56, 174 13, 464	21, 468 92, 774 65, 520 22, 365	27, 076 107, 544 62, 008 27, 065	23, 158 92, 886 81, 231 31, 653	8£, 112 28, 000
Trinidad	66, 483	110, 402	109, 310	163, 828	117, 983	89, 600
Cuba	4, 908, 638 281, 846	3, 496, 848 394, 609	2, 915, 208 493, 325	2, 234, 488 402, 806	2, 547, 219 428, 259	2, 592, 800 403, 200
TOMITICAL DONADIIC	1 401.040	1 994.009	1 180.020	1 404, 800	1 920, 209	1 4:00.200

¹ Preliminary.
2 No sugar produced.
3 Includes Turkey in Asia.
4 The manufacture of beet sugar by the Japan Sugar Co. in Chosen has been discontinued, according to trade reports.
5 Unofficial estimate.
6 Exclusive of production in minor producing countries for which no statistics are available.

Table 145.—Sugar: Production in specified countries, average 1921-22 to 1925-26. annual 1930-31 to 1934-35-Continued

CANE SUGAR (RAW)-Continued

OA.	NE SUGA	II (IIII 11)	COMMINGE			
Country	Average, 1921-22 to 1925-26	1930-31	1931-32	1932-33	1933-34 1	1934–35 1
NORTH AND CENTRAL AMERICA AND WEST INDIES—continued Haiti West Indies (French): Guadeloupe. Martinique.	Short tons 10, 158 32, 674 33, 573	Short tons 5 21, 068 20, 805 4 42, 029	Short tons ⁵ 23, 461 40, 785 ⁵ 50, 579	Short tons 5 28, 338 50, 667 5 52, 455	Short tons 5 28, 556 36, 008 5 49, 252	Short tons 5 30, 240 33, 600 5 44, 800
Total North and Central American countries and West Indies reporting all years	7, 041, 422	6, 517, 044	6, 303, 348	5, 501, 224	5, 933, 568	5, 639, 553
EUROPE AND ASIA Spain India 7. Taiwan Japan Java 8 Philippine Islands	3, 247, 800 471, 748 91, 569	5 25, 008 3, 604, 000 878, 841 85, 676 3, 095, 270 958, 032	⁵ 28, 373 4, 446, 000 1, 090, 249 122, 907 2, 514, 062 1, 174, 311	5 21, 683 5, 246, 080 697, 088 88, 668 1, 544, 683 1, 342, 795	\$ 17, 262 5, 675, 040 758, 603 119, 802 691, 738 91, 580, 443	\$ 18, 739 5, 695, 000 1, 101, 198 122, 471 504, 000 \$ 824, 000
Total European and Asiatic countries reporting all years 10_ SOUTH AMERICA	5, 932, 859	7, 688, 795	8, 201, 591	7, 598, 202	7, 262, 445	7, 441, 408
Argentina Brazil British Guiana Dutch Guiana Ecuador Peru Venezuela	112, 297	420, 854 1, 032, 787 141, 280 20, 744 23, 208 470, 000 5 21, 999	381, 914 5 1,137, 054 166, 470 5 22, 566 27, 214 450, 644 5 22, 609	383, 854 3 990, 997 159, 012 5 21, 812 15, 970 464, 385 5 26, 123	348, 420 5 721, 420 145, 600 5 20, 160 22, 400 468, 478 5 22, 400	382, 812 5 770, 840 140, 000 5 22, 400 21, 280 440, 920 5 22, 400
Total South America	1, 710, 823	2, 130, 872	2, 208, 471	2, 062, 153	1, 748, 878	1, 800, 652
AFRICA Mauritius Union of South Africa Mozambique Reunion Madagascar	100, 264 243, 069 182, 420 53, 219 52, 015 2, 168	134, 260 243, 564 393, 205 5 85, 421 55, 572 5, 181	162, 474 180, 788 325, 899 5 79, 098 5 47, 312 7, 496	187, 704 272, 511 358, 905 5 102, 510 5 59, 868 9, 370	169, 784 288, 207 391, 173 5 104, 720 5 85, 351 9, 150	168, 000 196, 000 355, 000 5 100, 800 5 71, 650 9, 500
Total African countries report- ing all years	633, 155	917, 203	803, 067	990, 868	1,048,385	900, 950z
OCEANIA Australia Fiji	411, 638 71, 984	599, 899 103, 190	676, 183 89, 292	595, 110 5 151, 470	5 748, 944 5 130, 047	δ 728, 000 δ 125, 440
Total Oceania	483, 622	703, 089	765, 475	746, 580	878, 991	⁵ 853, 440
Estimated world total cane sugar ⁶ Total world cane and beet sugar	15, 801, 881 16, 610, 000	17, 957, 003 19, 107, 000	18, 281, 952 19, 651, 000	16, 899, 027 18, 473 , 000	16, 872, 267 18, 634, 000	16, 636, 003 17, 646, 000
porting all years Estimated world total cane and	22, 972, 695 23, 781, 000	30, 380, 215 31, 530, 000	27, 837, 638 29, 207, 000	25, 467, 569 27, 042, 000	26,668,205 28,430,000	26, 947, 722 27, 958, 000
	,,			<u> </u>	!	<u> </u>

¹ Preliminary.

Freimmary.

5 Unofficial estimate.

7 The figures quoted for India are for the production of gur, a low grade of sugar polarizing between 50° nd 60°. Practically the entire crop is consumed within the country.

5 Figures for Java are for the calendar years 1922-35.

9 Unofficial estimate of production of centrifugal sugar, which usually accounts for about 90 percent of bettel transportation.

the total sugar production.

19 Production in the Philippine Islands is not included in this total, as the figures quoted for the last 4 years are not comparable with earlier years.

Sureau of Agricultural Economics; official sources, International Institute of Agriculture and Sugar Associations estimates except as otherwise stated.

Figures are for the crop years 1921–22 to 1934–35 for the countries in which the sugar-harvesting season begins in the fall months and is completed during the following calendar year, except in certain cane-sugar producing countries in the Southern Hemisphere, such as Argentina, Australia, Mauritius, Union of South Africa, etc., where the season begins in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1921–34.

TABLE 146.—Sugar, raw, cane and beet: Production, world and selected countries. 1909-10 to 1934-35

	Esti∽	Esti-	Esti-			s	selected	countrie	es		
Crop year 1	mated world total	mated world total cane	mated world total beet	United States ²	Cuba	India 3	Java 4	Ger- many	Czecho- slovakia	Po- land 6	France ⁷
1909-10 1910-11 1911-12 1911-13 1913-14 1915-16 1915-16 1916-17 1917-18 1918-19 1920-21 1920-22 1922-23 1922-24 1924-25 1925-26 1925-26 1928-27 1927-28 1928-29 1928-29 1928-30 1931-32 1933-34 1933-34 1934-35 •	1,000 short tons 16,828 18,834 17,908 18,855 20,542 20,575 18,855 20,293 18,592 20,293 117,989 117,989 20,578 20,5	1,000 short tons 9,670 9,870 10,896 11,952 12,278 13,255 14,790 14,076 14,338 14,225 15,127 16,306 16,712 18,813 18,125 18,671 20,319 20,459 19,651 18,673 18,671 20,319 19,651 18,673 18,674 19,651 18,674 19,651 18,674 19,661	1,000 short tons 7,158 8,964 7,286 6,607 5,503 4,528 5,503 4,528 5,733 6,651 5,733 6,895 9,176 6,958 9,176 10,142 8,559 9,844 10,142 8,559 10,148 10,	1,000 short tons 883 903 1,005 1,023 1,073 1,082 1,193 1,082 1,193 1,193 1,260 1,121 1,122 1,123 1,260 1,121 1,273 1,284 1,273 1,284 1,284 1,485	1,000 short tons: 1,661 2,720 2,922 3,398 3,890 4,481 4,406 4,408 4,408 4,408 4,408 4,555 2,555	1,000 short some 2,481 2,587 2,587 2,7862 2,7862 2,7862 2,7862 2,7862 2,7862 3,839 2,762 3,404 2,949 3,839 3	1,000 short tons 1,411 1,617 1,616 1,616 1,797 2,960 1,454 1,797 1,960 1,454 1,981 1,981 1,981 2,535 2,138 3,245 3,095 3,095 1,545 1	1,000 short tons: 2,147 2,770 1,752 2,902 2,862 2,721 1,726 1,721 1,726 1,434 1,604 1,724 1,846 2,188 2,188 2,188 2,160 1,575 1,760 1,575 1,760	8 714 553 797 731 1, 165 1, 153 1, 165 1, 142 1, 258 903 690 690	1,000 short tons 376 239 263 249 106 195 170 335 440 634 658 824 1,010 856 544 488 378 473	1,000 short tons 8 811 763 546 1,029 841 3555 159 1297 235 129 182 358 3266 522 524 521 1,039 1,011 1,298 964 1,039 1,153

¹ Figures are for the crop years 1909-10 to 1934-35 for the countries in which the sugar production season begins in the fall months and is completed during the following calendar year, except in certain cane-sugar-producing countries where the season begins in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1909-34.

Production in these countries is for the calendar years 1908-04.

Production of cane and beet sugar in terms of raw sugar.

The figures quoted for India are for the production of gur, a low grade of sugar polarizing between 50° and 60°. Practically the entire crop is consumed within the country.

All grades of sugar reduced to terms of head sugar, a grade of sugar which contains at least 96.5 percent sucrose. Figures for Java are for the calendar years 1910-35.

7 Figures for 1909-10 to 1918-19 refer to pre-war boundaries; 1914-15 to 1918-19 are exclusively of invaded territory.

Bohemia, Moravia, and Silesia only.

Preliminary.
Unofficial estimate

Bureau of Agricultural Economics. Estimated world total sugar production for the period 1895–96 to 1908–9 in 1924 Yearbook, table 386.

Table 147.—Cane sugar, raw (96° centrifugal): Average wholesale price per pound, New York, 1925-34 1

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age 2
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Cents 4.6 4.2 5.1 4.5 3.8 3.7 3.4 3.1 2.7 3.2	Cents 4.6 4.2 4.9 4.3 3.7 3.7 3.3 2.9 2.8 3.3	Cents 4.7 4.0 4.8 4.5 3.7 3.6 3.3 2.8 3.0 8.1	Cents 4.5 4.1 4.8 4.5 3.7 3.5 3.3 2.6 3.1 2.8	Cents 4.3 4.2 4.8 4.5 3.6 3.2 2.6 3.3 2.8	Cents 4.4 4.1 4.6 4.3 3.5 3.2 3.3 2.8 3.4 2.9	Cents 4.3 4.2 4.5 4.2 3.8 3.3 3.5 3.0 3.5 3.2	Cents 4.4 4.2 4.5 4.1 3.8 3.2 3.5 3.5 3.3	Cents 4.3 4.4 4.8 4.2 4.0 3.1 3.4 3.1 3.6 2.9	Cents 3.9 4.6 4.7 3.9 4.0 3.3 3.4 3.2 3.3 2.9	Cents 4.0 4.7 4.7 3.9 3.8 3.4 3.0 3.2 2.9	Cents 4, 1 5, 1 4, 6 3, 9 3, 8 3, 3 3, 2 2, 9 3, 2 2, 9	Cents 4.3 4.3 4.7 4.2 3.8 3.4 3.3 2.9 3.2 2.9

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics reports. Data for 1890–1924 are available in 1924 Yearbook, table 388.

^{*} Figures for 1909-10 to 1917-18 are for pre-war boundaries. Figures are incomplete through 1920-21; 1914-15 includes Prussian Poland only; 1915-16 to 1919-20 include Prussian Poland and Congress Poland; 1920-21 includes Prussian Poland, Congress Poland, and Galicia.

¹ Quotations are on basis of duty paid.
2 Derived from the figures on which the monthly averages are based.

Table 148.—Sugar, granulated: Average retail price per pound, United States, 1925-3/1

Year	Jan. 15	Feb.	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1933 1933	Cents 8. 1 6. 7 7. 5 7. 1 6. 7 6. 6 5. 9 5. 4 5. 1 5. 4	Cents 7. 7 6. 7 7. 5 7. 1 6. 6 6. 5 5. 9 5. 3 5. 0 5. 6	Cents 7. 7 6. 7 7. 4 7. 1 6. 5 6. 4 5. 8 5. 2 5. 0 5. 4	Cents 7. 5 6. 6 7. 3 7. 1 6. 4 6. 3 5. 7 5. 1 5. 1 5. 5	Cents 7, 2 6, 7 7, 3 7, 2 6, 4 6, 3 5, 6 4, 9 5, 3 5, 4	Cents 7. 2 6. 9 7. 3 7. 3 6. 4 6. 1 5. 6 4. 9 5. 4 5. 4	Cents 7. 1 6. 9 7. 4 7. 3 6. 4 6. 1 5. 6 5. 0 5. 5	Cents 7.0 7.0 7.3 7.1 6.6 6.1 5.7 5.1 1 5.6 5.7	Cents 7. 0 7. 0 7. 2 7. 0 6. 7 5. 9 5. 7 5. 1 5. 7 5. 7	Cents 6.8 7.1 7.2 6.9 6.7 5.8 5.6 5.1 5.7	Cents 6. 6 7. 1 7. 2 6. 8 6. 7 5. 9 5. 6 5. 1 5. 6	Cents 6.7 7.3 7.1 6.7 6.6 5.9 5.5 5.1 5.5	Cents 7. 2 6. 9 7. 3 7. 1 6. 6 6. 2 5. 7 5. 1 5. 4 5. 6

¹ Data are averages of prices as reported by retail dealers as of the 15th of month in 51 of the larger cities of the United States. Beginning August 1933, prices are reported twice during the month; those shown are nearest the 15th.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics retail prices. Data for 1913-24 available in 1930 Yearbook, table 162.

Table 149.—Sugar: International trade, average 1925-29, annual 1931-33

				Calenda	r year			
Country	Average	1925–29	19	31	19	32	193	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES	Short tons	Short tons	Short tons	Short tons	Short tons 2, 890, 028	Short tons	Short tons	Short tons
Netherlands Indies	792, 566 612, 260	3, 634 628 2, 398		2, 985 235	1,668,464	2, 526 20	21,283,018 224, 100 1, 188, 999	9
Dominican Republic Peru Poland	353, 915 332, 668	196 106 2, 291	353, 239	200 8, 224	484, 731 358, 393 204, 442	208 8, 286	323, 955 404, 089 125, 543	30
Mauritius Australia ³ Germany	179, 533 174, 357	911 92,758	305, 667 390, 677	3 137 6 14, 411	218, 129 245, 073 89, 606	9, 335 27, 507	16, 793	17, 424
Belgium British Guiana Union of Soviet Socialist Republics	113, 607	447	133, 668	52	153, 527	66	142, 333	50
Fiji. Hungary Union of South Africa.	92, 836	171 417	76, 089 57, 756	190 135	147, 058 19, 124	195 56 2,824	127, 496 24, 384 201, 969	166 19 614
Trinidad and Tobago Barbados Reunion	72, 520 61, 524 54, 035	1, 564 517 26	95, 336 38, 553 3 57, 191	46 3 1	94, 936 83, 675 8 59, 088	3 1		
Ja maica M ozambique Brazil	49, 676 37, 906 25, 076	93 20	83, 310 12, 240	67	70, 202 44, 602	70	28, 089	0 129
Argentina Nicaragua Madagascar	23, 426 8, 529 3, 897	408	1,822	682	1, 761	75	1,399	47
Total	11, 327, 779	275, 281	9, 270, 686	94, 927	8, 772, 484	183, 859	4, 415, 656	152, 941
PRINCIPAL IMPORTING COUNTRIES								
United States 4	167, 360 105, 263 40, 084	2, 135, 293 904, 568	38, 084	3, 176, 259 2, 048, 880 698, 310	33, 878	2, 971, 271 2, 662, 671 469, 360	380, 024 41, 447	2, 874, 127 2, 295, 976 347, 042
China Canada France	2,072 89,914 251,691	524, 446 460, 753	8, 771 297, 863	475, 765 372, 806	6, 224 312, 095	451, 432	10, 183 299, 731	395, 735 437, 030
Japan Netherlands Switzerland	204, 103 284, 204 74	316, 951	36, 366	125, 990	30, 506	159, 627	56, 469	117,090

Preliminary.
 Java and Madura only.
 International Yearbook of Agricultural Statistics.
 International Yearbook of Agricultural Statistics.
 Includes imports from Virgin Islands of the United States and Philippine Islands, but does not include shipments from Hawaii and Puerto Rico.
 Does not include Manchuria after June 30, 1932.

Table 149.—Sugar: International trade, average 1925-29, annual 1931-33-Continued

				Calenda	r year			
Country	Average	1925–29	19	31	19	32	19	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL IMPORTING COUNTRIES—COI. Chile	0 663 18 0 0 102 99 739 7 12 151 151 1, 648 0 20 3, 148 25 0 13, 346	136, 205 125, 180 121, 576 114, 982 110, 608 92, 080 87, 238 86, 255 81, 102 79, 282 66, 744 64, 751 63, 315 61, 046 46, 472 43, 221 41, 655 229, 742 25, 731 18, 109	12, 954 0 147 74 0 0 0 4, 087 11, 081	112, 358 152, 888 44, 282 93, 104 91, 120 77, 578 78, 144 7, 973 85, 068, 689 80, 889 80, 889 44, 578 14, 998 45, 526 49, 856 49, 856 49, 856 49, 856 49, 856 122, 217 26, 228 1, 597	17, 987 0 293 112 10 0 5 0 1, 155 12, 241 12, 241 275 234 0 275 234 0 3 261 3 47, 177	100, 210 159, 438 21, 013 97, 676 96, 346, 109 68, 567 49, 887 86, 108 81, 381 81, 381 13, 408 66, 215 78, 939 347, 682 32, 307 48, 373 48, 374 48, 37	13, 498 0 279 271 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	163, 638 1, 113 13, 010 98, 176 81, 809 81, 646 84, 066 1, 262 12, 783 60, 458 80, 277 65, 563 4, 829 36, 422 3, 510 16, 545
Total	1, 214, 711	11, 879, 420	776, 107	9, 532, 739	952, 455	9, 168, 649	1, 052, 421	8, 109, 57

Bureau of Agricultural Economics; official sources except where otherwise noted.

The following kinds and grades have been included under the head of sugar: Brown, white, candied, caramel, chanaca (Peru), crystal cube, maple, muscovado, panela. The following have been excluded: "Candy" (meaning confectionery), confectionery, glucose, grape sugar, jaggery, molasses, and sirups.

Table 150.—Sugarcane sirup: Acreage, yield, production, and price per gallon received by producers December 1, by States, averages, and annual 1933 and 1934

		Acreage harvested for sirup			d per a	cre	P	roductio	n	Price I	Dec. 1
State	Aver- age, 1927-31	1933	1934 1	A ver- age, 1922-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	1933	1934
South Carolina Georgia Florida Alabama Mississippi Arkansas Louisiana Texas	1,000 acres 5 28 9 19 15 1 19 7	1,000 acres 6 33 10 28 19 1 21	1,000 acres 5 32 10 32 24 1 27 8	Gal. 91 138 162 116 132 98 257 115	Gal. 105 125 150 115 167 135 260 164	Gal. 105 116 165 132 180 58 259 100	1 000 gal. 531 3, 890 1, 560 2, 143 2, 123 5, 598 976	1,000 gal. 630 4,125 1,500 3,220 3,173 135 5,458 1,476	1,000 gal. 525 3,712 1,650 4,224 4,320 58 7,001	Cents 65 50 45 55 45 65 2 34 55	Cents 70 50 50 42 75 2 37 65
United States	103	127	139	154. 2	155. 3	160. 4	17, 075	19, 717	22, 290	46.3	45.4

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

¹ Preliminary. ⁶ Year ended Mar. 20 of the following year; beginning 1931, year ended June 21 of following year.

^{7 2-}year average.
8 Year ended Mar. 31 of following year.

¹ Preliminary.

Average price for crop-marketing season.

Table 151.—Sorgo sirup: Acreage, yield, production, and price per gallon received by producers Dec. 1, by States, averages, and annual 1933 and 1934

	Acreage	harv or siruj	ested p	Yield	l per a	cre	P	roductio	n	Price Dec. 1		
State	Aver- age, 1927-31	1933	1934 1	A ver- age, 1922-31	1933	19341	Aver- age, 1927-31	1933	19341	1933	1934	
Indiana Illinois Lowa Missouri Kansas Virginia North Carolina Georgia Kentucky Tennessee Alabama Mississippi Arkansas Oklahoma Texas United States	1,000 acres 2 2 3 111 2 2 2 20 7 13 13 13 2 2 2 10 10 11 11 11 12 13 14 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	1,000 acres 2 2 2 12 4 5 24 8 17 14 21 48 23 17 3 38	1,000 acres 3 3 2 14 2 5 22 7 16 14 21 5 24 16 3 26	Gal- lons 65 66 79 58 54 65 69 54 61 60 66 77 56	Gal- lons 65 58 75 47 43 63 75 52 64 62 60 68 75 56 55 56	Gal- lons 75 68 60 35 35 67 75 53 64 66 55 75 81 38 20 33	1,000 gallons 143 126 252 613 118 150 1,355 376 854 748 1,258 2,111 796 254 1,108	1,000 gallons 130 116 150 564 172 315 1,800 416 1,088 863 1,260 3,264 1,725 952 165 1,976	1,000 gallons 225 204 120 490 70 335 1,650 371 1,024 924 1,155 3,750 1,944 608 858	Cents 60 65 60 55 50 65 55 50 48 49 48 48 46 46	Cents 60 65 75 70 65 65 65 60 55 49 50 45 60 65 55 51 1	

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 152.—Maple sugar and sirup: Production and average price received by producers, United States, 1917-34

Year	Trees	Sugar	Sirup	Total product	Average t uct pe	otal prod- er tree	Price per	Price per gallon
	tapped	made	made	in terms of sugar 1	As sugar 1	As sirup 1	of sugar	of sirup
1917	16, 672 14, 160 15, 198 14, 178 14, 193 14, 070 13, 948 13, 751 13, 489 12, 858 13, 062 12, 138 12, 091	1,000 pounds 10,525 12,944 6,928 4,699 5,227 4,656 4,096 4,096 1,382 3,585 3,183 1,362 2,370 1,623 1,238 1,2	1,000 gallons 4,263 4,263 3,131 2,149 3,370 3,370 3,574 3,574 3,574 3,574 3,574 3,429 2,782 2,361 3,429 2,133 2,412 2,213 2,412 2,418 2,395	1,000 pounds 44, 589 51, 48, 56, 637 31, 976 21, 891 32, 187 30, 752 32, 688 25, 774 31, 617 30, 615 24, 445 20, 250 31, 350 20, 919 18, 776 20, 431	Pounds 2.58 2.71 2.14 1.92 1.55 2.12 2.17 2.30 1.83 2.27 2.23 1.81 1.58 2.41 1.58 2.417 1.59 1.73	Gallons 0.32 -34 -24 -19 -26 -27 -23 -23 -23 -23 -20 -20 -20 -21	26. 0 26. 9 29. 3 28. 7 28. 6 30. 0	Dollars

 $^{^{1}}$ I gallon of sirup taken as equivalent to S pounds of sugar. 2 Preliminary.

Bureau of Agricultural Economies; estimates of the Crop Reporting Board, revised 1919-28. See intro ductory text.

Table 153.—Honey: Monthly average price in specified locations, 1928-34 EXTRACTED HONEY, PER POUND

	1921	1 1021	1111	11011	, -							
Item, location, and year	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
California White to Water White Orange: F.o.b. southern California shipping points: 1 1928 1929 1930 1931 1932 1933 1934 New York City: 2 1928	Cents 10 934 1234 714 6 638 514	Cents 10 934 12½ 7½ 6 63/8 47/8	Cents 10 91/2 131/2 71/4 55/8 61/4 5	Cents 9½ 9½ 10½ 6¾ 478 6¼ 4¼ 4½	Cents 83/4 10 81/4 61/2 41/2 47/8	Cents 834 1014 8 614 412 5 51,8	Cents 9 11 7½ 6¼ 4¼ 4½ 5½	914 1114 712 638 438 512 558	Cents 9½ 11 7½ 6¼ 43/6 53/8 53/4	Cents 9½ 11 7½ 6½ 5½ 538 6	Cents 934 12 71/2 63/8 53/4 51/4 61/4	Cents 9½ 7¾ 6½ 5½ 5¼ 6¼
1929 1930 1931 1932 1933 1933 Intermountain White to Water White Sweet Clover and Alfalfa:	12½ 13½ 13½ 11¾ 9½ 9¼ 85%	12½ 13½ 11½ 9½ 9½ 9½ 8¾	12½ 13½ 11¼ 9½ 9½ 9¼ 8¾	12½ 13½ 11 9½ 85% 834	12½ 12½ 11½ 11 9½ 8½ 8½ 8¾	121/2 121/2 121/4 101/2 91/2 81/2 81/8	81/2	12½ 12¾ 12¾ 10½ 8¾ 8½ 8¾ 8½	12%4 13 125% 11 83% 81/2 83/4	13 13½ 12½ 11 8¾ 8¾ 9	1284 1314 1214 1014 9 884 834	12½ 13½ 12 10¾ 8¾ 8¾ 8½
F. o. b. Intermountain points: 3 1928	714 714 714 514 434 458 458	71/2 71/8 71/4 51/2 5 33/4 45/8	714 73/8 7 51/2 5 37/8 43/4	714 758 678 518 434 334 5	714 734 612 478 5 378	7 71/2 53/4 45/6 47/6 51/6	714 7 614 51/8 43/4 4	73/8 61/2 51/8	714 714 534 518 334 434 512	7½ 7½ 5½ 5 3¾ 4½ 5½	7 714 538 518 334 434 558	7 71.8 53.4 45.8 45.8 55.8
States: 4 1928 1929 1930 1931 1932 1933 1934 Northeastern Buckwheat: F. o. b. New York and Pannsyl vania	81/2 83/4 75/6 61/2 5	814 834 814 618 614 5	1 43/	8 914 814 634 576 5 614	5	53/4	9½ 7¾ 6¾ 6 5	9 834 8 634 536 634	73/	8½ 8¼ 7¼ 7 5¼ 6⅓ 6¾	9 814 738 658 5 618 678	81/2 8 71/2 63/8 47/8 6 67/8
points: 4 1928 1929 1930 1930 1931 1932 1938 1934	71/4 78/4 78/4 78/4 31/8 48/4	71/4 71/4 61/4 53/4 43/4 51/6	3/2	7½ 7¾ 5¾ 4½	7½ 48, 41,	7	51/	1 43/	61/2 5 41/4	71/2 8 61/2 5 43/4 57/6	75/8 51/2 5	714 714 6 5 4 516 558
	COL	ивн	ONE	7, 24-S	ECTI	ON C	ASES					
White Clover comb, No. 1 and Fancy wrapped: F.o.b. New York and North Central States: 4 1928 1929 1930 1931 1932 1932 1933 1934	3. 30 2. 40	Dol. 4. 80 4. 50 4. 00 3. 75 3. 25 2. 40 2. 80	Dol. 4. 50 4. 25 4. 00 3. 35 2. 30 3. 00	Dol. 4. 80 4. 25 4. 00 3. 40 3. 25 2. 50 3. 10	Dol. 4. 50 4. 25 3. 25 3. 30 2. 40 3. 10	2, 50	3. 50 2. 40	4. 50 4. 25 3. 60 3. 15 2. 65	Dol. 4. 50 4. 25 4. 25 3. 75 2. 85 3. 00 3. 00	Dol. 4. 50 4. 00 4. 00 3. 50 2. 65 3. 00 3. 00	Dol. 4. 80 4. 00 4. 00 3. 50 2. 70 3. 00 3. 00	Dol. 4.50 4.00 3.75 3.40 2.60 2.90 3.30

Price to beekeepers or other shippers in large lots, mostly less than car lots.
 Sales by original receivers to bottlers, confectioners, bakers, and jobbers.
 Price to beekeepers and other shippers, in car lots.
 Price to beekeepers in large lots, mostly less than car lots.

Bureau of Agricultural Economics.

Table 154.—Maple sugar and sirup: Production, by States, average 1927-31, and annual 1933 and 1934

	Тт	ees tapp	ed	S	ugar mad	le	S	irup mad	ie
State	Aver- age, 1927-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1	Aver- age, 1927-31	1933	1934 1
Maine. New Hampshire. Vermont. Massachusetts. New York Pennsylvania Ohio. Michigan Wisconsin. Maryland	1,000 trees 254 402 5,552 269 3,602 838 1,301 515 263 63	1,000 trees 255 388 5,290 236 3,184 664 1,216 490 295 58	1,000 trees 260 380 5,449 236 3,216 657 1,216 436 251 57	1,000 pounds 19 145 1,108 89 503 142 50 54 10 29	1,000 pounds 210 46 554 66 388 108 32 35 24 25	1,000 pounds 215 59 678 105 284 83 5 13 11	1,000 gallons 37 77 1,098 62 806 225 367 118 70 25	1,000 gallons 29 50 625 36 597 209 413 140 62 25	1,000 gallons 29 71 971 65 668 199 273 72 30
United States	13, 060	12, 076	12, 158	2, 150	1, 288	1, 271	2,885	2, 186	2, 395

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

Table 155.—Tobacco, unmanufactured: Acreage, production, value, and foreign trade, United States, 1919-34

Year	Acreage	Aver-	D-odustics	Price per pound received	Farm value,	Foreign-t	rade year l July	oeginning
- 112	harvested	yield per acre	Production	by pro- ducers, Dec. 1 1	basis Dec. 1 price	Domestic exports ²	Imports 2	Net exports 2 3
1919	Acres 1,861,480	Pounds 736. 8	1,000 pounds 1,371,504	Cents	1,000 dollars	1,000 pounds	1,000 pounds	1,000 pounds
1919 1920 1921 1922 1923	1, 958, 500 1, 934, 800 1, 339, 500 1, 616, 200	737. 4 780. 0 750. 2 776. 1 818. 1	1, 444, 206 1, 509, 212 1, 004, 928 1, 254, 304 1, 517, 583	31. 2 17. 3 19. 5 22. 8 19. 0	451, 171 260, 350 196, 113 286, 417 288, 102	648, 038 506, 526 463, 389 454, 364 597, 630	94, 005 58, 923 65, 225 75, 786 54, 497	570, 858 456, 477 403, 492 384, 223 548, 287
1924 1925 1926 1927	1, 537, 843 1, 702, 300 1, 750, 700 1, 628, 400	719. 4 731. 3 786. 0 791. 7 778. 5	1, 106, 540 1, 244, 928 1, 376, 008 1, 289, 272 1, 211, 311	19. 0 16. 8 17. 9 20. 7	236, 937 230, 642 231, 208 250, 462	430, 702 537, 240 516, 402 489, 996	76, 870 69, 974 92, 983 81, 045	355, 739 468, 958 424, 651 411, 366
1928 1929 1930	1, 864, 400 1, 888, 365 1, 987, 600 2, 111, 600	736. 5 771. 3 773. 5 780. 2	1, 373, 214 1, 456, 510 1, 537, 313 1, 647, 377	20. 0 18. 4 12. 8	274, 136 282, 168 211, 156	565, 925 600, 181 591, 035	79, 284 63, 181 75, 425	489, 149 541, 312 517, 388
1931 1932 1933 1934 ⁴	1, 411, 200 1, 756, 600	791. 8 727. 1 784. 3 820. 6	1, 583, 567 1, 026, 091 1, 377, 639 1, 095, 662	8. 2 10. 5 13. 0 22. 0	129, 689 107, 821 179, 486 240, 937	432, 361 399, 967 472, 630	73, 375 59, 545 55, 700	359, 374 341, 455 416, 930

¹ Preliminary.
2 Not including approximately 200,000 lbs. of sugar produced in Somerset County, not on farms.

Beginning with 1919 prices are average prices for crop-marketing season.
 Compiled from Monthly Summary of Foreign Commerce of the United States, June issues 1919-26
 January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.
 Total exports (domestic exports plus foreign) minus imports. Beginning 1933-34, domestic exports minus imports for consumption. (See introductory text.)

⁴ Preliminary.

Bureau of Agricultural Economics.

Italic figures are census returns; other acreage, yield, and production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text.

Table 156.—Tobacco: Acreage, yield, production, and average price per pound received by producers, by class and type, 1933 and 1934

	Туре	Acreage h	arvested	Yield p	er acre	Produ	etion	Price
Class and type	no.	1933	1934 1	1933	1934 1	1933	1934 1	erop of 1933
Flue-cured: Old Belt Eastern North Carolina Belt South Carolina Belt Georgia-Florida Belt	11 12 13 14	Acres 332, 400 360, 000 171, 800 70, 800	Acres 265, 000 270, 000 120, 400 55, 400	<i>Lb</i> . 714 810 862 871	Lb. 748 855 832 634	1,000 lb. 237, 237 291, 600 148, 092 61, 654	1,000 lb. 198, 350 230, 850 100, 192 35, 128	Cents 16. 6 16. 4 12. 8 11. 3
Total	11-14	935, 000	710, 800	790	794	738, 583	564, 520	15. 3
Fire-cured: Virginia. Clarksville and Hopkinsville. Paducah. Henderson Stemming	21 22 23 24	32, 800 97, 000 34, 300 4, 000	25, 600 88, 300 32, 600 4, 700	760 805 643 740	900 839 856 825	24, 928 78, 105 22, 050 2, 960	23, 040 74, 060 27, 916 3, 878	6. 8 10. 5 6. 8 6. 5
Total	21-24	168, 100	151, 200	762	852	128, 043	128, 894	9. 1
Air-cured (light): BurleySouthern Maryland	31 32	508, 700 34, 000	348, 100 32, 300	754 600	813 725	383, 342 20, 400	282, 999 23, 418	10. 6 17. 5
Total	31-32	542, 700	380, 400	744	806	403, 742	306, 417	10. 9
Air-cured (dark): One Sucker	35 36 37	23, 000 16, 000 2, 800	19, 100 16, 800 4, 200	783 740 720	849 865 850	18, 006 11, 840 2, 016	16, 215 14, 532 3, 570	6. 7 7. 9 8. 5
Total	35–37	41,800	40, 100	762	856	31,862	34, 317	7. 3
Cigar-filler: Pennsylvania seed leaf Miami Valley Georgia and Florida sun-	41 42-44	21, 000 14, 000	15, 000 13, 600	1,000 726	1, 150 925	21, 000 10, 165	17, 250 12, 580	5. 5 6. 0
grown	45	100	300	820	1, 200	82	360	11.0
Total	41-45	35, 100	28, 900	890	1,045	31, 247	30, 190	5. 7
Cigar binder: Connecticut Valley broadlesf Connecticut Valley Havana	51	7, 200	5, 100	1,490	1,600	10,731	8, 160	12, 5
seed	52 53 54	6, 700 700 8, 400	3,300 500 4,700	1, 471 1, 157 1, 290	1, 572 1, 198 1, 370	9, 854 810 10, 836	5, 186 599 6, 439	9. 7 4. 0 5. 8
Northern Wisconsin	55	4, 500	2,900	1, 213	1, 273	5, 457	3, 692	4.8
Total	51-55	27, 500	16, 500	1, 370	1, 459	37, 688	24, 076	8. 8
Cigar wrapper: Connecticut Valley shade grown Georgia and Florida shade	61	4, 600	4,900	1,075	1, 075	4, 946	5, 268	64. 0
grown	62	1,300	2,000	931	890	1, 210	1,780	32.0
Total	61-62	5, 900	6, 900	1, 043	1, 021	6, 156	7, 048	57.7
Miscellaneous types: Eastern Ohio Louisiana Perique		200 300	100 300	950 425	950 350	190 128	95 105	4. 7 20. 0
Total		500	400	636	500	318	200	11.0
United States	All	1, 756, 600	1, 335, 200	784.3	820.6	1, 377, 639	1, 095, 662	13. (

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 157.—Tobacco: Acreage, yield, production, and average price per pound received by producers, by States, averages, and annual 1933 and 1984

	Acre	age harve	sted	Yield per acre			F	Price for crop of—			
State	Average, 1927–31	1933	1934 1	Aver- age, 1922- 31	1933	1934 1	Average, 1927-31	1933	1934 1	1933	19341
Massachusetts Connecticut New York Pennsylvania. Ohio Indiana Wisconsin Missouri Kansas Maryland Virginia West Virginia South Carolina. Georgia Florida Kentucky Tennessee Louisiana United States	117, 000 97, 600 10, 100 447, 740 130, 900 340	13, 600 21, 300 33, 000 14, 700 9, 000 9, 000 132, 000 132, 000 6, 700 687, 000 103, 000 6, 000 6, 200 454, 000 157, 000 300	10, 300 15, 200 24, 000 8, 800 7, 500 100 6, 100 32, 300 113, 000 514, 000 72, 000 120, 000 120, 000	1, 300 1, 139 1, 286 861 847 1, 180 2 1, 138 962 749 668 758 688 700 766 914 802 797 424	1, 366 1, 200 1, 001 758 720 1, 272 1, 272 900 915 8100 645 784 860 881 778 425	1, 386 1, 150 1, 152 897 740 1, 340 600 600 600 725 823 680 815 800 632 751 810 863	29, 900 1, 156 49, 463 37, 573 12, 826 46, 223 1, 759 5, 185 23, 638 114, 122 4, 248 506, 763 83, 820 79, 410 8, 751 347, 291 107, 514	480 21, 330 25, 015 10, 585 16, 023 488 20, 400 97, 046 4, 322 538, 859 58, 124 4, 822 325, 132, 248	14, 276 345 17, 504 21, 527 6, 512 10, 031 80 3, 660 23, 418 92, 970 2, 040 418, 802 57, 600 32, 234 5, 034 281, 216 103, 590	10. 8 17. 5 12. 8 10. 8 16. 0 12. 6 11. 4 16. 1 10. 1 20. 0	27. 2 33. 9 8. 5 7. 5 7. 5 7. 7 7. 0 15. 0 15. 0 24. 0 29. 2 21. 6 19. 0 26. 5 15. 7 15. 1

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 158.—Tobacco: Acreage, yield per acre and production in specified countries, 1932-33 to 1934-35 1

7000 00 00 2007 03													
		Acreage	1	Yie	ld per a	cre ²	Production						
Country	1932-33	1933-34	1934- 353	1932–33	1933-34	1934- 353	1932-33	1933–34	1934–35 3				
NORTH AMERICA, CENTRAL AMERICA, AND WEST INDIES Canada United States Mexico Cuba Dominican Republic Puerto Rico	1, 411 33 93	1,000 acres 46 1,757 31 112	1,000 acres 1,335	Lbs. 999 727 748 329	Lbs. 976 784 687 378	Lbs. 821 549	1,000 pounds 54,094 1,026,091 24,561 35,190 411,574 6,000	1,000 pounds 44,873 1,377,639 21,502 36,873	1,000 pounds 38, 120 1, 095, 662				
EUROPE Belgium. Germany. Poland Union of Soviet Socialist Republics. France. Switzerland	7 27 13 610 41	1 7 30 12 465 44 2	7 30 10	2,042 1,955 2,321 1,467 558 1,633 1,557	1,724 2,011 2,187 1,367 802 1,434 1,575	2, 029 1, 465	1, 327 13, 688 62, 223 18, 921 340, 015 67, 716 1, 698	62, 675	14, 201 15, 283				

¹ Acreage and production figures are for the harvesting season. In the Northern Hemisphere, data for 1932-33, for example, are for crops harvested in the summer and fall of 1932; in the Southern Hemisphere they are for crops harvested in the spring of 1933, except in Netherlands India, where the harvest was largely completed in 1932.

² Calculated from actual acreage and production, except in instances where rounded figures only were

available.

^{2 8-}year average.

³ Preliminary.

⁴ Unofficial.

Table 158.—Tobacco: Acreage, yield per acre and production in specified countries, 1932-33 to 1934-35 1—Continued

		Acreage)	Yie	ld per a	cre 2	Production			
Country	1932-33	1933-34	1934- 353	1932-33	1933-34	1934- 35 ³	1932-33	1933-34	1934-353	
EUROPE—continued Czechoslovakia. Hungary. Rumania. Spain. Italy. Yugoslavia Bulgaria. Greece.	1,000 acres 25 61 25 10 99 44 50 157	1,000 acres 25 45 25 12 88 22 67 192	1,000 acres 25 40 25 88 23 49 185	Lbs. 1, 523 1, 437 616 1, 622 1, 028 857 763 412	Lbs. 1, 038 1, 169 555 1, 194 1, 112 776 805 631	Lbs. 1, 283 1, 154 	1,000 pounds 37, 623 87, 073 15, 609 16, 605 101, 632 37, 934 38, 256 64, 497	1,000 pounds 25, 957 52, 583 13, 844 14, 330 97, 842 17, 013 53, 915 120, 985	1,000 pounds 32,079 46,155 90,831 19,841 32,872 92,594	
TurkeyASIA TurkeyByria and LebanonPalestineIndiaCeylonIndo-ChinaJapanChosen (Korea)Taiwan (Formosa)Philippine IslandsJava and Madura 6Sumatra 6South America	64 12 3 1, 212 14 37 84 33 2 193 68 42	116 17 	127 10 	839 1, 599 1, 313		611 722	39, 771 5, 780 1, 260 51,361,920 30, 704 133, 611 43, 897 2, 821 99, 529 59, 339 30, 559	29, 652 146, 696 35, 635	77, 926 7, 216	
Brazil Chile Argentina Uruguay AFRICA	5 35 1	20 1	47	1,648 929 1,180		751	7 170, 453 8, 746 32, 959 1, 511 40, 663	18, 903	35, 274	
Tunis Nyssaland 6 Northern Rhodesia 6 Southern Rhodesia 6 Union of South Africa 6 Madagascar	1 8	43 27		1, 052 444 485 753	1, 139		1, 362 3, 488 15, 675 9, 300 21, 385	26, 792 15, 215		
OCEANIA Australia. New Zealand Total, all countries reporting acreage	26 2			370 840			9, 723 1, 785	2, 652		
and production all years. Estimated world to- tal s.	2, 096	2, 499	2, 077				1, 651, 550 4, 509, 000	2, 052, 953	1, 733, 923	

See footnotes 1 to 3 on page 453.

5 Exclusive of North-West Frontier Province.

⁶ Data for European plantations only. In Nyasaland the native production for 1932-33 was 9,132,480 pounds; in the Union of South Africa production on native locations and reserves is estimated at 1,000,000 pounds annually. 7 1931-32.

⁸ Exclusive of China. An official estimate of the "average" annual production in 25 of the 28 Provinces, issued in 1932, was 465,000,000 pounds. The production of flue-cured tobacco was estimated at 144,000,000 pounds in 1933–34 and 140,000,000 pounds in 1934–35.

Bureau of Agricultural Economics; compiled from official sources, International Institute of Agriculture and reports of United States consuls, commercial attachés, agricultural attachés, and commodity specialists in foreign countries, except as otherwise stated.

Table 159.—Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919–34 $^{\rm 1}$

FLUE-CURED, TYPES 11-14 2

Pro- duc- tion	Stocks Oct. 1, green weight 3	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	Season aver- age farm price per pound	Year	Pro- duc- tion	Stocks Oct. 1, green weight 3	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	age f	arm per
Mil- lion pounds 476. 9 616. 0 358. 8 415. 4 580. 7 437. 3 575. 1 560. 1	pounds 382, 6 355, 4 562, 3 517, 4	971. 4 921, 1 932. 8	Mil- lion pounds 504. 1 409. 1 403. 7 421. 0 542. 5 456. 7 577. 8 544. 7	Cents 44.4 21.5 21.9 27.2 20.8 21.6 20.0 24.9	1927 1928 1929 1930 1931 1932 1933 1934	Mil- lion pounds 718. 8 739. 1 749. 8 864. 3 669. 9 376. 8 738. 6 564. 5	pounds 543, 3 663, 2 694, 4 709 0	pounds 1, 262. 1 1, 402. 3 1, 444. 2	Mil- lion pounds 598, 9 707, 9 735, 2 772, 4 596, 9 569, 5 650, 7	20. 17. 18. 12. 8. 11.	5 3 0 0 4 5
			VIR	GINIA FIRE-	CURE	D, TYI	PE 21				
29.8 45.7 24.7 49.1 43.7 43.2 42.1 43.8	42, 2 37, 9 42, 4 30, 1 32, 8 41, 4 51, 9 60, 2	72. 0 83. 6 67. 1 79. 2 76. 5 84. 6 94. 0 104. 0	34. 1 41. 2 37. 0 46. 4 35. 1 32. 7 33. 8 36. 2	24. 0 9. 1 18. 8 19. 8 18. 1 19. 4 16. 2 7. 8	1927 1928 1929 1930 1931 1932 1933 1934	26. 6 21. 9 22. 8 23. 3 28. 3 13. 5 24. 9 23. 0	67. 8 59. 2 37. 7 33. 7 34. 5 39. 0 32. 5 33. 5	94. 4 81. 1 60. 5 57. 0 62. 8 52. 5 57. 4 56. 5	35. 2 43. 4 26. 8 22. 5 23. 8 20. 0 23. 9	10. 16. 8. 4. 8.	6 9 3 7 0
	KENT	UCKY	AND	rennessee	FIRE-	CURE	D, TYP	ES 22 A	ND 23		
238. 0 182, 4 137. 4 186. 9 203, 2	153. 9 195. 2 169. 1 141. 0 152. 6	391, 9 377, 6 306, 5 327, 9 355, 8	196. 7 208. 5 165. 5 175. 3 200. 4	4 19. 1 5 15. 1 4 11. 7 5 9. 1 4 18. 6 5 14. 2 4 16. 4 5 13. 2 4 12. 2 5 10. 8	1924 1925 1926 1927 1928	156. 5 154. 7 135. 1 82. 7 108. 6	155, 4 163, 7 183, 2 175, 3 123, 6	311. 9 318. 4 318. 3 258. 0 232. 2	148. 2 135. 2 143. 0 134. 4 119. 6	\$ 16.1 \$ 9.9 \$ 8.6 \$ 18.4 \$ 15.8	5 10.8 5 6.9 5 6.1 5 12.2 5 12.6
	K	ENTUC	KY A	ND TENNES	SEE F	IRE-C	URED,	TYPE 2	2		<u> </u>
107. 6 96. 0 103. 7	89. 9 94. 7 110. 8	197. 5 190. 7 214. 5	102. 8 79. 9 85. 4	14. 2 9. 9 5. 8	1932 1933 1934	78. 5 78. 1 74. 1	129. 1 149. 7 135. 1	207. 6 227. 8 209. 2	57.9 92.7		
	K	ENTUC	'KY A	ND TENNES	SEE F	IRE-C	JRED,	TYPE 2	3		
47. 4 38. 0 48. 9	22. 7 21. 2 29. 7	70. 1 59. 2 78. 6	48. 9 29. 5 36. 3	10. 0 5. 6 4. 0	1932 1933 1934	29.5 22.0 27.9	42. 3 29. 2 33. 4	71.8 51.2 61.3	42.6 17.8		
			HEND	ERSON FIR	E-CUR	ED, T	YPE 24				
19.5 12.5 8.3 14.1 14.5 14.2 14.0 9.9	10.2 16.6 9.9 4.7 3.6 4.6 7.0 8.9	29.7 29.1 18.2 18.8 18.1 18.8 21.0 18.8	13. 1 19. 2 13. 5 15. 2 13. 5 11. 8 12. 1 9. 9	16. 0 10. 0 15. 0 15. 0 12. 0 12. 0 7. 3 7. 4	1927 1928 1929 1930 1931 1932 1933 1934	4.2 6.0 9.5 8.9 7.2 3.9 3.0	8.9 5.6 .8 .9 3.9 5.0 4.7	13.1 11.6 10.3 9.8 11.1 8.9 7.7 8.8	7.5 10.8 9.4 5.9 6.1 4.2 2.8	13, 9, 6, 4, 3.	9 5 9 0 4
	duction Million Million A76.9 616.0 358.8 575.1 560.1 29.8 45.7 24.7 143.7 24.7 143.8 238.0 182.4 137.4 242.1 43.8 107.6 96.0 103.7	Milion Weight Million Weight Million Weight Million Milion Million Milli	Production Stocks Oct. 1 Supply Stocks Oct. 1 Supply Production	Production	Production	Production Stocks Oct. 1, Total green supply Proper Stocks Oct. 1, Proper Supply Proper Proper Proper Proper Proper Proper Proper Proper	Product Prod	Production Product Production Produc	Stocks Cot. 1, Total get arm Year Product Stocks Cot. 1, Total get arm Product P		

Table 159.—Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34 1—Continued

BURLEY, TYPE 31

Year	Pro- duc- tion	Stocks Oct. 1, green weight ³	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	Season aver- age farm price per pound	Year	Pro- due- tion	Stocks Oct. 1, green weight 3	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	Season aver- age farm price per pound
1919 1920 1921 1922 1923 1924 1925 1926	Mil- lion pounds 300. 3 287. 7 175. 7 276. 4 340. 4 295. 8 277. 8 288. 8	Million pounds 288. 2 330. 8 395. 3 340. 6 408. 8 516. 7 546. 8 553. 3	Million pounds 588. 5 618. 5 571. 0 617. 0 749. 2 812. 5 824. 6 842. 1	Mil- lion pounds 257. 7 223. 2 230. 4 208. 2 232. 5 265. 7 271. 3 304. 5	Cents 33. 2 13. 5 21. 5 26. 8 20. 0 20. 1 18. 0 13. 1	1927 1928 1929 1930 1931 1932 1933 1934	Mil- lion pounds 176. 2 269. 1 342. 2 357. 7 435. 3 310. 4 383. 3 283. 0	Million pounds 537. 6 422, 5 403. 0 448. 1 521. 6 697. 8 736. 4 837. 8	Million pounds 713.8 691.6 745.2 805.8 956.9 1,008.2 1,119.7 1,120.8	Mil- lion pounds 291. 3 288. 6 297. 1 284. 2 259. 1 271. 8 281. 9	Cents 25, 9 30, 5 21, 8 15, 5 8, 7 12, 5 10, 6
	•	·	<u></u>	SOUT	HERN MAR	YLAN	D, TYI	PE 326			
1919 1920 1921 1922 1923 1924 1925 1926	19.6 27.1 18.6 20.0 21.4 24.5 24.7 26.0	22. 9 18.0 15. 4 11. 9 7. 6 12. 9 16. 3 20. 1	42. 5 45. 1 34. 0 31. 9 29. 0 37. 4 41. 0 46. 1	24. 5 29. 7 22. 1 24. 3 16. 1 21. 1 20. 9 29. 7	26. 5 17. 8 16. 9 23. 8 27. 7 22. 7 23. 7 20. 2	1927 1928 1929 1930 1931 1932 1933 1934	26, 2 20, 5 24, 8 18, 7 28, 1 27, 1 20, 4 23, 4	16. 4 21. 8 16. 7 18. 4 22. 7 33. 7 40. 6 37. 6	42. 6 42. 3 41. 5 37. 1 50. 8 60. 8 61. 0 61. 0	20. 8 25. 6 23. 1 14. 4 17. 1 20. 2 23. 4	23. 4 27. 2 27. 7 26. 6 15. 0 17. 0
					ONE SUCK	ER, TY	PE 35				-
1919 1920 1921 1922 1923 1924 1925 1926	68. 7 53. 6 28. 3 52. 2 55. 1 39. 0 35. 5 31. 2	37. 2 51. 4 54. 4 41. 6 38. 5 47. 3 48. 0 56. 6	105. 9 105. 0 82. 7 93. 8 93. 6 86. 3 83. 5 87. 8	54. 5 50. 6 41. 1 55. 3 46. 3 38. 3 26. 9 40. 4	14. 2 7. 2 12. 2 12. 8 9. 9 11. 2 8. 4 6. 4	1927 1928 1929 1930 1931 1932 1933 1934	29. 9 29. 4 28. 7	47. 4 30. 5 24. 2 28. 8 36. 5 38. 0 34. 4 36. 0	60, 5 50, 5 54, 1 58, 2 65, 2 56, 2 52, 4 52, 2	30. 0 26. 3 25. 3 21. 7 27. 2 21. 8 16. 4	10. 6 12. 4 10. 5 7. 0 3. 4 4. 8 6. 7
	·	·		· 	GREEN RIV	ER, T	YPE 3	3			
1919 1920 1921 1922 1923 1924 1925 1926	60. 1 47. 5 34. 6 57. 2 59. 0 47. 6 51. 0 40. 0	49. 3 58. 0 53. 7 46. 5 62. 1 64. 8 61. 4 61. 5	109. 4 105. 5 88. 3 103. 7 121. 1 112. 4 112. 4 101. 5	51. 4 51. 8 41. 8 41. 6 56. 3 51. 0 50. 9 44. 3	16. 0 9. 0 15. 0 16. 0 11. 0 11. 6 6. 9 7. 4	1927_ 1928_ 1929_ 1930_ 1931_ 1932_ 1933_ 1934_	18. 9 27. 4 28. 3 41, 8	57. 2 47. 5 36. 3 27. 9 28. 5 42. 5 42. 7 36. 9	75. 3 66. 4 63. 7 56. 2 70. 3 62. 4 54. 5 51. 4	27. 8 30. 1 35. 8 27. 7 27. 8 19. 7 17. 6	9. 1 11. 5 10. 7 8. 9 3. 3 3. 4 7. 9
				VIR	GINIA SUN-	CURE	D, TYI	E 37			***************************************
1919	6.0 9.1 4.0 8.2 6.2 5.6 5.7 7.2	10.9 12.1 12.2 10.6 10.2 7.8 5.3 5.4	16. 9 21. 2 16. 2 18. 8 16. 4 13. 4 11. 0 12. 6	4.8 9.0 5.6 8.6 8.6 8.1 5.6	28. 0 9. 2 18. 2 14. 3 13. 2 14. 6 16. 4 9. 4	1927_ 1928_ 1929_ 1930_ 1931_ 1932_ 1933_ 1934_	4.1 3.4 3.2 1.3 2.0	1 4:0	13. 1 11. 5 10. 9 8. 3 7. 7 5. 7 6. 1 6. 2	6. 6 4. 7 6. 0 3. 8 3. 3 1. 6 3. 5	13, 1 10, 1 13, 2 7, 7 5, 3 6, 1 8, 5
			F	ENNS	YLVANIA SI	EED L	EAF, T	YPE 41	. 7		
1919 1920 1921 1922 1923 1924 1925 1926	55, 7 62, 0 57, 9 54, 4 54, 7 56, 8 56, 4	177.4	175. 8 165. 7 171. 0 182. 7	68.0 49.1 43.0 40.9 53.9 66.6	14.3 15.8 18.0 15.6	1927_ 1928_ 1929_ 1930_ 1931_ 1932_ 1933_ 1934_	50. 8 39. 4 57. 1 45. 9 21. 0	109. 5 108. 2 103. 8 97. 6 138. 8 127. 0	155. 4 160. 2 159. 0 143. 2 154. 7 184. 7 148. 0 134. 4	45. 9 52. 0 55. 2 45. 6 15. 9 57. 7 30. 8	12. 9 13. 9 12. 0 6. 4 7. 4 5. 2 5. 5

See footnotes at end of table.

Table 159.—Tobacco, unmanufactured: Production, stocks, supply, disappearance, and price in continental United States, 1919-34 —Continued

MIAMI VALLEY, TYPES 42-44

-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
Year	Pro- duc- tion	Stocks Oct. 1, green weight ³	Total supply	Disappear- ance, begin- ning Oct. 1	Season average farm price per pound	Year	Pro- duo- tion	Stocks Oct. 1, green weight 3	Total supply	Disappearance, beginning Oct. 1	Season aver- age farm price per pound
1919 1920 1921 1923 1924 1925 1926	Mil- lion pounds 39. 0 38. 6 28. 2 26. 6 25. 9 25. 2 34. 1 21. 8	Million pounds 88.1 101.5 99.8 94.1 94.8 71.9 91.5	Million pounds 127. 1 140. 1 128. 0 120. 7 120. 7 119. 6 106. 0 113. 3	Mil- lion pounds 25. 6 40. 3 33. 9 25. 9 26. 3 47. 7 14. 5 39. 6	Cents 20. 0 16. 0 11. 0 14. 0 13. 0 13. 0 11. 4 8. 5	1927 1928 1929 1930 1931 1932 1933 1934	Mil- lion pounds 12. 2 15. 6 20. 7 32. 3 33. 5 21. 7 10. 2 12. 6	Million pounds 73. 7 61. 8 51. 9 47. 1 69. 1 73. 7 69. 7	Million pounds 85. 9 77. 4 72. 6 79. 4 102. 6 95. 4 79. 9 83. 3	Mil- lion pounds 24.1 25.5 25.5 10.3 28.9 25.7 9.2	Cents 15.6 17.5 13.8 10.1 5.5 4.0 6.0
G	EORG	IA AND	FLOR	IDA S	UN-GROWN	AND	SHADI	E-GROV	VN, TY	PES 45	AND 62
1919 1920 1921 1922 1923	6. 0 5. 7 5. 0 4. 8 6. 0	7.8 8.5 10.7 10.5 9.4	13, 8 14, 2 15, 7 15, 3 15, 4	5. 3 3. 5 5. 2 5. 9 6. 9	\$ 20. 4	1924 1925 1926 1927 1928	4.7 3.4 4.1 5.2 5.5	8. 5 6. 9 6. 4 6. 3 9. 1	13. 2 10. 3 10. 5 11. 5 14. 6	6.3 3.9 4.2 2.4 5.7	\$ 20. 1 9 60. 0 \$ 20. 0 9 65. 0 \$ 20. 0 9 65. 0 \$ 20. 0 9 65. 0 \$ 20. 0 9 55. 0
			GEOF	RGIA A	ND FLORID	A SUN	v-GRO	WN, TY	PE 45		
1929 1930 1931	1.9 1.5 1.1	2.9 3.4 3.6	4.8 4.9 4.7	1.4 1.3 1.5	20. 0 20. 0 15. 0	1932_ 1933_ 1934_	.2	3. 2 2. 7 2. 5	3. 4 2. 8 2. 9	.7	10.0 11.0
			CONI	NECTI	CUT VALLE	Y BRO	DADLE	AF, TY	PE 51		
1919_ 1920_ 1921_ 1922_ 1923_ 1924_ 1925_ 1926_	28. 2 27. 5 28. 6 14. 8 20. 4 22. 9 26. 5 18. 9	30. 2 34. 6 38. 2 41. 0 43. 0 50. 3 56. 2 54. 8	58. 4 62. 1 66. 8 55. 8 63. 4 73. 2 82. 7 73. 7	23. 8 23. 9 25. 8 12. 8 13. 1 17. 0 27. 9 26. 4	44. 8 39. 2 19. 9 30. 0 35. 0 20. 0 18. 9 26. 0	1927 1928 1929 1930 1931 1932 1933 1934	17. 0 16. 1 12. 1 18. 5 18. 8 15. 0 10. 7 8. 2	47. 3 40. 0 39. 6 31. 7 38. 4 46. 7 47. 6 45. 6	64. 3 56. 1 51. 7 50. 2 57. 2 61. 7 58. 3 53. 8	24, 3 16, 5 20, 0 11, 8 10, 5 14, 1 12, 7	21. 0 21. 0 27. 4 25. 1 14. 0 11. 5 12. 5
		(CONNI	CTIC	UT VALLEY	HAVA	NA SI	EED, T	YPE 52 :	0	
1919 1920 1921 1922 1923 1924 1925 1926	23. 9 21. 9 22. 6 18. 0 24. 2 23. 1 21. 2 16. 2	29. 6 35. 8 32. 0 44. 2 51. 3 57. 2 61. 1 60. 6	53. 5 57. 7 55. 2 62. 2 75. 5 80. 3 82. 3 76. 8	17.7 25.1 11.0 10.9 18.3 19.2 21.7 22.7	31. 8 36. 4 23. 0 29. 3 35. 4 19. 2 16. 2 27. 2	1927 1928 1929 1930 1931 1932 1933 1934	15.8 17.2 18.1 17.9 15.3 18.0 9.9 5.2	54. 1 47. 3 40. 0 42. 1 42. 8 47. 4 44. 7 43. 3	69. 9 64. 5 58. 1 60. 0 58. 1 65. 4 54. 6 48. 5	22. 6 24. 5 16. 0 17. 2 10. 7 20. 7 11. 3	23. 8 24. 2 31. 1 21. 9 13. 0 8. 5 9. 7
		NEW	YORK	AND	PENNSYLV.	ANIA	HAVA	NA SEE	D, TYI	PE 53 7	
1919_ 1920_ 1921_ 1922_ 1923_ 1924_ 1925_ 1926_	4.1 3.6 3.7 3.3 3.5 3.4 3.2 2.5	2.9 3.1 4.5 5.7 4.2 4.0 5.5	7.0 6.7 8.2 9.0 7.7 7.4 8.7 8.2	3.9 2.2 2.5 4.8 3.7 1.9 3.0 4.2	22. 5 27. 0 19. 3 25. 0 21. 3 21. 9 20. 1 19. 5	1927 1928 1929 1930 1931 1932 1933 1934	1.5 2.1 1.8	2.8 2.8 2.7 3.8 4.9 4.7	4. 4 4. 2 4. 2 5. 9 6. 7 5. 5	2.0	18.0 19.3 15.4 11.7 9.5 3.5 4.0
				w	isconsin, t	YPES	54 AN	D 55		, ,	
1919_ 1920_ 1921_ 1922_ 1923_	56. 9 58. 7 58. 9 43. 3 47. 0	91.7 112.6 124.4 159.3 156.3	148.6 171.3 183.3 202.6 203.3	36, 0 46, 9 24, 0 46, 3 55, 9	11 20. 0 12 26. 0 11 12 6 12 17. 2 11 6. 7 12 12. 3 11 13. 0 12 14. 4 11 8. 6 13 12. 1	1924_ 1925_ 1926_ 1927_ 1928_	36. 4 44. 9 33. 8 33. 9 49. 3	147. 4 131. 1 123. 4 111. 5 97. 9	183. 8 176. 0 157. 2 145. 4 147. 2	52. 7 52. 6 45. 7 47. 5 32. 1	11 9. 6 12 14. 1 11 11. 6 13 13. 8 11 12. 8 12 15. 4 11 14. 0 13 18. 9 11 13. 7 13 15. 9

See footnotes at end of table.

Table 159.—Tobacco, unmanufactured: Production, stocks, supply, disappearance. and price in continental United States, 1919-341-Continued

SOUTHERN WISCONSIN, TYPE 54

Year	Pro- due- tion	Stocks Oct. 1, green weight ³	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	Season aver- age farm price per pound	Year	Pro- duc- tion	Stocks Oct. 1, green weight ³	Total supply	Dis- ap- pear- ance, begin- ning Oct. 1	Season aver- age farm price per pound
1929 1930 1931	Mil- lion pounds 29.7 31.8 31.0	Million pounds 68. 8 69. 6 82. 0	Million pounds 98. 5 101. 4 113. 0	Mil- lion pounds 28.9 19.4 14.4	Cents 13. 4 9. 8 5. 6	1932 1933 1934	Mil- lion pounds 25. 0 10. 8 6. 4	Million pounds 98. 6 98. 0 99. 2	Million pounds 123. 6 108. 8 105. 6		Cents 4. 5 5. 5
				NOR'	PHERN WIS	CONSI	N, TY	PE 55			
1929 1930 1931	20. 2 24. 0 20. 0	46. 3 44. 6 57. 8	66. 5 68. 6 77. 8	21. 9 10. 8 16. 6	17. 3 10. 3 5. 1	1932 1933 1934	11. 9 5. 5 3. 7	61. 2 64. 5 55. 9	73. 1 70. 0 59. 6	8. 6 14. 1	3. 9 4. 8
			CONNE	CTIC	T VALLEY	SHAD	E-GRC	WN, T	YPE 61	<u> </u>	
1919 1920 1921 1922 1923 1924 1925 1926	5.8 5.4 7.5 6.8 9.6 7.4 4.8 5.3	7.0 6.4 9.4 9.2 11.1 11.9 12.7 7.8	12.8 11.8 16.9 16.0 20.7 19.3 17.5 13.1	6. 4 2. 4 7. 7 4. 9 8. 8 6. 6 9. 7 5. 1	105. 0 100. 0 95. 0 90. 0 100. 0 85. 0 100. 0 97. 8	1927 1928 1929 1930 1931 1932 1933 1934	5. 3 4. 5	8. 0 8. 3 7. 9 12. 4 13. 3 13. 3 13. 1 10. 6	14. 4 15. 2 18. 1 20. 1 18. 6 17. 8 18. 0 15. 9	6. 1 7. 3 5. 7 6. 8 5. 3 4. 7 7. 4	105. 0 93. 0 56. 0 73. 0 82. 0 59. 0 64. 0
		(BEORG	IA AN	D FLORIDA	SHAL	E-GR	OWN, T	YPE 62	;	,
1929 1930 1931	4.4 3.8 3.1	6. 0 7. 4 6. 5	10. 4 11. 2 9. 6	3. 0 4. 7 3. 2	55. 0 60. 0 30. 0	1932 1933 1934		6. 4 5. 8 5. 2	8.8 7.0 7.0	3. 0 1. 8	35. 0 32. 0
			М	ISCEL	LANEOUS I	OMES	TIC, T	YPE 7) 18		
1919 1920 1921 1922 1923 1924 1925 1926	4.1 1.9 2.6 2.2 1.3	7.8 10.7 10.7 7.7 3.9 2.8 2.2 1.6	13. 6 14. 8 12. 6 10. 3 6. 1 4. 1 3. 1 2. 3	2. 9 4. 1 4. 9 6. 4 3. 3 1. 9 1. 5 1. 1	20. 8 18. 2 23. 6 27. 4 32. 0 24. 8 27. 9 16. 6	1927 1928 1929 1930 1931 1932 1933 1934	1. 2 2. 4 . 9 1. 2 . 5	1. 2 1. 2 2. 6 3. 2 2. 9 2. 4 2. 3 2. 6	2. 2 2. 4 5. 0 4. 1 4. 1 2. 9 2. 6 2. 8	1. 0 (14) 1. 8 1. 2 1. 7 . 6 (15)	19. 2 18. 0 9. 6 13. 0 9. 7 12. 3 11. 0

Bureau of Agricultural Economics; stocks prior to 1929 compiled from reports of the Bureau of the Census.

Production and price data, 1919-29, revised May 1932.
 Stocks as of July 1 and disappearance beginning July 1.
 Calculated by converting stemmed to unstemmed and storage weight to green, or farmers' sales weight,

Catchiacted by converting seemined to dissemined and storage weight to green, or farmers sales weight, by allowing for normal losses of moisture and stem.
 Type 22.
 Type 23.
 Stocks as of Jan. 1 of year following production, and disappearance beginning Jan. 1 of year following production.

⁷ Previous to 1929 tobacco stocks reports included Pennsylvania and New York. Pennsylvania is be-lieved to refer entirely to type 41. New York is believed to include type 53 produced both in New York and Pennsylvania.

§ Type 45.

§ Type 45.

§ Type 52.

in Includes primed Havana seed, which has not been reported separately since 1929.

ii Type 54.

¹² Type 55.
13 Includes Eastern Ohio and Perique. For years 1920-24 Round Tip also included. The stocks for earlier years probably include some other tobacco not reported separately as to type.
14 Tobacco stock classification changed in 1929, increasing miscellaneous stocks, so that 1928 disappearance

cannot be made comparable.

15 Less than 50,000 pounds.

Table 160.—Tobacco: Stocks in hands of dealers and manufacturers, first of each quarter, 1930–34 $^{\rm 1}$

				1	1				
Type and year	1	-		Oct. 1	Type and year	Jan. 1	Apr. 1	July 1	Oct. 1
Flue-cured, types 11, 12, 13, and 14: 1930. 1931. 1932. 1932. 1934. Virginia fire-cured, type 21: 1930. 1931. 1932. 1933. 1934. Kentucky and Tennessee fire-cured, type 22 (eastern district): 1930. 1931. 1932. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1934. 1935. 1939. 1	1,000 pounds 795, 484 868, 983 893, 098 769, 497 858, 124	1,000 pounds 707, 149 831, 347 845, 642 680, 280 785, 207	1,000 pounds 599, 262 676, 752 795, 207 578, 157 652, 064	1,000 pounds 687, 769 739, 356 720, 508 605, 710 758, 709	Ohio cigar leaf (Mi- ami Valley), types 42, 43, and 44: 1930	1,000 pounds 34, 502 30, 502 48, 572 56, 339 54, 291	1,000 pounds 41, 448 54, 389 55, 605 57, 463 55, 477	1,000 pounds 42, 282 58, 455 61, 424 57, 326 56, 727	1,000 pounds 36, 427 54, 186 57, 762 54, 623 55, 324
1930	34, 997 33, 392 30, 352 31, 369 23, 109	40, 021 38, 364 40, 711 35, 820 37, 643	35, 625 33, 241 36, 243 31, 514 32, 230	27, 917 28, 607 32, 216 26, 906 27, 655	Georgia and Florida Sun-grown, type 45: 1930 1931 1932 1933 1934 1931 1932 1933 1934 Conn. Valley Broad- leaf, type 51: 1930 1931 1932 1933 1934 Conn. Valley Broad- leaf, type 51: 1930 1931 1932 1933 1934 Conn. Valley Hav- ana seed, type 52: 1930 1931 1932 1933 1934 New York Havana seed, type 53: 1930 1931 1932 1933 1934 Wisconsin cigar leaf, types 54 and 55: 1930 1931 1932 1933 1934 Conn. Valley shade grown, type 61: 1930 1931 1932 1933 1934 Conn. Valley shade grown, type 61: 1930 1931 1932 1933 1934 Congia and Florida shade, type 62: 1930 1931 1932 1933 1934 Georgia and Florida shade, type 62:	1, 538 2, 033 2, 097 2, 063 1, 503	1, 319 2, 223 2, 188 1, 938 1, 352	1, 340 1, 530 2, 277 1, 839 1, 135	2, 345 2, 419 2, 025 1, 722 1, 620
type 22 (eastern district): 1930	79, 385 79, 263 83, 561 113, 210 105, 487	125, 173 122, 148 115, 379 143, 790 136, 387	121, 954 121, 372 128, 965 148, 311 136, 532	87, 589 102, 121 119, 480 138, 565 125, 116	leaf, type 46: 1930	29, 039 27, 284 26, 415 19, 668 20, 487	28, 442 27, 932 25, 647 19, 318 21, 162	24, 734 24, 940 23, 470 18, 732 19, 490	23, 510 23, 546 20, 336 17, 831 18, 499
type 23 (western district): 1930	27, 475 21, 288 28, 295 39, 734 39, 797	33, 450 32, 256 40, 100 54, 444 47, 748	24, 901 34, 174 48, 014 48, 057 43, 816	19, 467 27, 228 39, 046 26, 962 30, 896	1930	29, 507 23, 438 29, 501 35, 099 35, 238	30, 072 30, 758 36, 505 35, 667 37, 384	28, 960 33, 377 36, 783 38, 961 39, 126	24, 809 29, 969 36, 647 37, 450 35, 740
(stemming), type 24: 1930	2, 794 3, 788 3, 183 3, 109	5, 089 8, 519 5, 234 8, 335 4 811	2, 291 4, 212 5, 186 5, 605	736 3, 102 4, 147 4, 006 4, 164	1931 1932 1932 1934 New York Havana seed, type 53:	32, 739 33, 849 35, 818 34, 486	42, 176 41, 753 38, 643 35, 651	35, 752 38, 265 40, 854 38, 329 36, 254	32, 898 33, 442 37, 092 35, 048 34, 011
(stemming), type 24: 1930	352, 803 407, 557 490, 614 619, 690 585, 252	506, 378 568, 010 702, 834 744, 164 829, 593	438, 659 500, 042 651, 166 677, 589 764, 143	373, 032 436, 802 586, 560 615, 930 700, 173	1931 1932 1933 1934 Wisconsin cigar leaf, types 54 and 55:	2,837 2,864 3,335 4,136	3, 558 4, 455 3, 255 3, 382	3, 644 4, 370 3, 932 3, 102	3, 034 3, 881 3, 761 2, 704
Southern Maryland, type 32: 1930. 1931. 1932. 1933. 1934. One-sucker, type 35: 1930. 1931. 1932. 1933. 1934. 1934. 1936. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938. 1938.	15, 304 17, 038 20, 998 31, 325 37, 989	11, 960 14, 615 19, 559 29, 247 31, 921	9, 553 11, 756 21, 677 28, 444 29, 597	17, 167 22, 109 30, 670 40, 488 35, 577	1931 1932 1933 1934 Conn. Valley shade grown, type 61:	73, 291 95, 964 115, 587 120, 319	97, 515 114, 686 117, 557 119, 506	112, 555 128, 423 127, 225 121, 738	105, 169 121, 273 124, 192 118, 649
1930	29, 852 29, 180 31, 680 34, 054 27, 384	38, 218 48, 357 45, 106 40, 941 41, 178	30, 283 41, 026 37, 495 36, 677 35, 700	25, 123 32, 324 33, 715 30, 461 31, 893	1931 1932 1933 1934 Georgia and Florida shade, type 62:	11, 771 10, 908 11, 300 10, 821	10, 499 10, 818 11, 504 10, 865 10, 238	10, 255 10, 720 10, 452 9, 576	10, 162 10, 863 10, 902 10, 730 8, 685
1930 1931 1932 1933 1934 Virginia sun-cured, type 37:	30, 824 27, 369 26, 953 33, 791 35, 101	35, 618 29, 308 38, 957 44, 006 37, 684	28, 533 26, 136 36, 952 41, 508 35, 725	23, 786 24, 242 36, 305 36, 574 31, 655	11 1029	5, 165 4, 825 4, 799 3, 958	4, 950 4, 428 4, 407 4, 218 3, 439	3, 616 3, 923 3, 039	5, 162 4, 634 4, 150
1933 1934 Virginia sun-cured, type 37: 1930 1931 1932 1933 1934 Pennsylvania seed- leaf, type 41: 1930 1931 1931 1932 1931 1932 1933 1931	4, 941 3, 855 3, 174 3, 397 2, 284	5, 820 4, 709 4, 635 3, 606 4, 467	4, 935 4, 145 4, 207 3, 225 2, 496	3, 878 3, 455 3, 358 3, 241 2, 026	1930 1931 1932 1933 1934	2, 722 2, 722 2, 864 2, 262 2, 184	4, 105 2, 973 2, 927 2, 927 2, 095 2, 339	2, 932 2, 843 2, 551 2, 043 1, 996	2, 918 2, 573 2, 183 2, 068 2, 259
1930	73, 186 68, 790 66, 310 98, 777 91, 672	93, 795 80, 387 115, 064 99, 956 96, 162	90, 292 83, 011 114, 702 99, 045 97, 084	79, 592 74, 200 107, 683 99, 312 91, 695					,

¹ Storage order basis, including some tobacco which has been stemmed.

Bureau of Agricultural Economics.

Table 161.—Tobacco: Exports from the United States to principal importing countries, 1925-34

FLUE-CURED, TYPES 11, 12, 13, AND 14

		FLUE-	CUREI	o, TYP	ES 11, 1	2, 13, A.	ND 14			
					Calenda	ır year				
Importing countries	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
United Kingdom	1,000 pounds 131,034 78,824 19,638 9,445 5,988 33,350	1,000 pounds 125,964 82,669 20,843 13,517 12,385 31,957,	1,000 pounds 166,655 45,386 17,247 13,037 12,809 47,291	1,000 pounds 162,329 159,664 20,050 13,440 16,327 63,088	1,000 pounds 199,632 99,455 18,488 13,263 6,558 73,440	1,000 pounds 180,380 108,913 26,248 12,964 10,946 58,244	1,000 pounds 145,309 148,634 14,924 11,366 7,864 60,155	1,000 pounds 11,899 68,565 11,938 8,832 7,935 146,142	1,000 pounds 165,717 69,340 5,813 8,376 4,554 44,140	1,000 pounds 175, 372 53, 458 13, 902 7, 830 4, 702 50, 720
Total	278, 279	287, 335	302, 425	434, 898	410, 836	397, 695	388, 252	255, 311	297, 940	305, 984
		VIR	GINIA	FIRE-C	URED,	TYPE	21			
United Kingdom Germany Netherlands Australia China Norway Belgium Canada France Other countries	4,889 3,621 2,971 2,912 399 1,506 101 363 232 3,349	3, 626 3, 571 2, 810 2, 480 70 1, 880 528 20 514 2, 891	1, 357 5, 493 2, 807 2, 336 1, 774 2, 020 1, 295 283 1, 631 5, 281	1, 234 2, 966 1, 164 780 111 2, 657 1, 693 356 1, 240 6, 494	1, 923 2, 085 839 775 179 1, 648 2, 055 152 1, 699 12, 767	2, 324 2, 588 1, 025 2, 015 107 1, 881 317 177 650 4, 295	1, 413 1, 879 1, 255 689 1, 265 668 93 150 4, 018	1, 824 1, 943 2, 147 522 1, 442 1, 844 54 4, 594	554 1, 450 1, 067 326 	1, 308 1, 702 1, 265 359 10 1, 457 1, 223 88 16 3, 998
Total	20, 343	18, 390	24, 277	18, 695	24, 122	15, 379	11, 430	14, 370	11, 936	11, 431
KENTUC	KY AN	D TEN	NESSE	E FIRI	E-CURE	D, TY	PES 22,	23, AN	D 24	<u> </u>
United Kingdom Spain France Germany Italy Netherlands Belgium Other countries	9, 071 6, 639 30, 280	15, 734 1, 479 32, 823 10, 453 4, 066 13, 611 14, 411 27, 270	9, 149 19, 423 20, 769 10, 027 385 8, 039 13, 956 30, 260	6, 547 13, 292 13, 465 9, 280 650 8, 962 6, 079 25, 739	7, 271 1, 966 15, 582 10, 916 2, 587 11, 167 5, 286 25, 002	6, 288 1, 047 37, 516 8, 810 3, 165 13, 345 6, 795 28, 474	5, 579 2, 463 18, 494 8, 091 3, 228 7, 507 8, 025 14, 584	4, 749 9, 493 31, 274 7, 289 694 2, 948 9, 510 13, 436	4, 725 15, 854 21, 365 6, 272 649 3, 438 8, 537 15, 734	2, 111 13, 626 20, 275 5, 113 885 1, 894 9, 909 11, 608
Total	116, 974	119, 847	112, 008	84, 014	79, 777	105, 440	67, 971	79, 393	76, 574	65, 421
			BUI	RLEY,	rype 3	1		,		
Belgium France Portugal Netherlands Germany Other countries Total	0	3, 450 413 1, 094 136 197 1, 439 6, 729	5, 697 229 2, 362 3, 332 1, 618 4, 606	1, 924 149 1, 238 60 185 2, 988 6, 544	1, 483 8 1, 433 151 103 2, 158 5, 336	3, 867 16 2, 746 156 209 2, 630 9, 624	3, 073 471 1, 635 382 387 2, 971 8, 919	5, 034 326 1, 813 1, 171 763 3, 235	3, 708 243 1, 482 1, 368 388 3, 422	6, 678 186 2, 849 1, 938 481 4, 252 16, 384
	M.	ARYLA	ND, TY	PE 32,	AND C	HIO E	XPORT	<u> </u>		
France	297 581	5, 514 4, 595 528 674 946 1, 335 13, 592	8, 957 5, 317 885 942 1, 369 2, 566 20, 036	3, 547 3, 328 694 426 1, 487 1, 465	6, 016 1, 435 642 492 1, 788 1, 204 11, 577	3, 253 1, 080 1, 039 185 1, 700 2, 464 9, 721	3, 788 546 597 115 1, 903 600 7, 549	3, 750 2, 441 1, 120 226 1, 445 1, 187	2, 066 2, 763 1, 270 608 1, 899 580 9, 186	3, 267 894 280 1, 684 816 7, 103
		1		1	R, TYP	·	1	1		T
Belgium British West Africa Other countries Total			1, 588 2, 087 2, 695 6, 370	921 1, 694 612 3, 227	2,370 635 3,213	790 1, 154 845 2, 789	981 89 407	299 367 331	640 188 288 1, 116	596 112 354 1,062
	1	1	., 0,0	1 0, 441	1 0, 210	4, 108	1 4, 211	1 881	1 , 110	1 1,002

¹ On a dry-weight basis, including some tobacco which has been stemmed.

Table 161.—Tobacco: Exports from the United States to principal importing countries, 1925-34-Continued

GREEN RIVER TYPE 36

			#REEN	RIVEL	s, TYP	£ 36				
					Calenda	r year				
Importing countries	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
United Kingdom British West Africa. China		3, 638 3, 122 2, 663	4, 615 1, 347 1, 025	2, 401 817 214	5, 434 1, 044 540	4, 117 310 455	4, 205 89	2, 727 368	1, 404 360	879 166
BelgiumOther countries	700 3, 169	1, 491 3, 162	900 4, 942	698 4, 238	594 2, 750	1, 177 1, 860	475 578	579 715	409 369	760 439
Total	17, 971	14, 076	12, 829	8, 368	10, 362	7, 919	5, 347	4, 389	2, 542	2, 244
BLACK FAT AN	D DAR	K AFR	ICAN,	CONSI	STING	PRINC	DIPALL	Y OF	ONE-SU	CKER
British Guiana British West Africa French Africa Other countries			65 252 107 195	132 608 356 404	74 2, 179 2, 331 1, 071	240 4, 390 2, 059 1, 385	194 4, 634 2, 480 1, 365	222 5, 552 2, 685 1, 518	231 4, 352 2, 064 1, 931	127 3, 943 1, 896 1, 836
Total			619	1, 500	5, 655	8, 074	8, 673	9, 977	8, 578	7, 802
			CIGA	R-LEA1	FTYPE	s				
Netherlands	331	101 142 263 0 113	68 203 217 0 43	14 310 242 0 96	86 333 321 3, 465 204	94 292 188 3,384 195	169 239 230 2, 997 159	48 130 297 195 26	765 54 432 643	110 - 190 490 3 690
Total	883	619	531	662	4, 409	4, 153	3, 794	696	1,894	1, 483
	<u>' </u>	TOTA	L EXP	ORTS,	ALL T	YPES	1	·		<u> </u>
United Kingdom China Germany Italy France Belgium Netherlands Australia Spain Canada Other countries Total	82, 598 21, 587 11, 263 21, 723 14, 255 20, 803 22, 577 15, 031 11, 956 75, 563	149, 720 85, 792 27, 854 5, 814 49, 573 21, 592 29, 566 23, 356 23, 356 3, 483 15, 508 68, 515	51, 359 31, 387 3, 262 38, 082 26, 293 27, 483 19, 812 20, 829 15, 394 89, 809	160, 391 30, 164 1, 817 21, 447 15, 679 23, 788 21, 167 17, 036 16, 097 94, 155	214, 598 100, 675 20, 461 3, 368 35, 840 13, 752 21, 731 19, 915 12, 929 14, 511 97, 567	109, 504 23, 044 3, 881 56, 517 16, 609 23, 273 28, 739 1, 058 14, 146 90, 371	161, 340 20, 443 4, 085 29, 655 17, 414 19, 209 15, 756 5, 990 12, 425 80, 649	74, 781 29, 175 2, 224 36, 602 22, 869 16, 519 12, 837 10, 370 9, 429 74, 452	174, 765 69, 369 13, 803 1, 660 24, 695 19, 518 17, 268 6, 710 15, 871 8, 771 67, 988	180, 287 64, 747 18, 325 2, 141 21, 935 24, 954 16, 908 14, 606 13, 712 8, 392 74, 859
100ar	1200, 211	1210,110	من من من	1010, 214	1000, U±1	000, 000	OME, ZON	1 1 100-	710	Fru, 000

¹ On a dry-weight basis, including some tobacco which has been stemmed.

Table 162.—Tobacco reexports from the United States, 1923-34

Calen- dar year	L	eaf	Manufactured				I	eaf	Manufactured		
dar	Cigar wrap- per	Other	Ciga- rettes	Cigars and che- roots	Other	Calen- dar year	Cigar wrap- per	Other	Ciga- rettes	Cigars and che- roots	Other
1923 1924 1925 1926 1927	541, 520 671, 667 460, 567 330, 826	Pounds 3, 202, 937 4, 307, 654 1, 483, 795 698, 515 1, 160, 033 2, 178, 539	<i>Lb.</i> 171 475 478 1,120 7,808 3,050	8, 039 1, 433 511 86	Lb. 223, 688 50, 992 256, 453 43, 209 79, 306 165, 884	1929 1930 1931 1932 1933 1934	Pounds 268, 905 809, 097 228, 460 436, 673 233, 909 201, 184	Pounds 4, 934, 744 1, 501, 507 343, 306 311, 942 636, 847 438, 357	2,964 (1) (1) (1)	Lb. 11,720 3,895 571 (1) (1) (1)	Lb. 34, 468 15, 702 15, 136 15, 816 15, 315 16, 136

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and official records of the Bureau of Foreign and Domestic Commerce.

Reported as total tobacco manufactured.
 Includes stems, trimmings, and scraps as follows; Year 1931, 20,925,000 pounds; 1932, 23,393,000 pounds; and 1934, 21,883,000 pounds.
 Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

Table 163.—Tobacco imported by the United States from foreign countries and shipments from possessions, 1925-34

Product and country				C	alendar 1	year				
from which imported	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Cigar wrapper: Netherlands Other countries	1,000 pounds 6, 261 174	1,000 pounds 6, 323 228	1,000 pounds 5,664 120	1,000 pounds 6,498 133	1,000 pounds 8, 460 103	1,000 pounds 3, 758 100	1,000 pounds 4,694 51	1,000 pounds 1,992 514	1,000 pounds 1,941 130	1,000 pounds 2,029 119
Total	6, 435	6, 551	5, 784	6, 631	8, 563	3, 858	4, 745	2, 506	2,071	2, 148
Other cigar leaf: Philippine Islands. Cuba. Puerto Rico. Other countries. Total.	1, 166 21, 133 20, 358 163 42, 820	908 22, 562 27, 261 110 50, 841	1, 611 23, 254 24, 047 288 49, 200	3, 727 21, 869 17, 575 13 43, 184	3, 963 22, 237 22, 303 20 48, 523	4, 680 19, 656 19, 193 58 43, 587	4, 144 16, 228 16, 565 8 36, 945	3, 560 10, 639 5, 698 4 19, 901	1, 627 10, 706 15, 255 8 27, 596	1, 485 11, 173 15, 272 (¹) 27, 930
Cigarette leaf: Bulgaria Germany Greece Italy Turkey Other countries	347 892 22, 958 10, 312 12, 085 431	499 729 13, 704 10, 764 9, 812 651	78 896 29, 909 17, 570 20, 957 410	46 885 13, 152 10, 280 15, 624 348	412 17, 340 8, 894 4, 162 196	113 15, 562 9, 811 14, 280 106	15 49 19, 698 11, 967 11, 409 364	7 213 15, 058 11, 164 8, 136 1, 274	2 13, 329 7, 178 16, 323 1, 234	16, 289 6, 934 13, 264 1, 803
Total	47, 025	36, 159	69, 820	40, 335	31,004	39, 872	43, 502	35, 852	38, 066	38, 364
Scrap and other un- manufactured	6, 749	6, 231	8, 813	10, 413	10, 433	9, 173	11, 160	9, 048	8, 649	8, 680

¹ Less than 500 pounds.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

Table 164.—Tobacco products imported by the United States from foreign countries and shipments from possessions, calendar years 1925-34

Product and country from which imported	1925	1926	1927	1928	1929
Cigarettes: Philippine Islands	207, 110	38, 311 4, 625 (1) 3, 021, 298 177, 501 424, 327 374, 679	36, 643 5, 227 (1) 2, 645, 177 147, 555 413, 077 402, 747	25, 229 5, 368 (1) 2, 574, 138 153, 590 390, 271 274, 249	16, 546 4, 730 (1) 2, 073, 116 144, 967 380, 530 211, 463
Product and country from which imported	1930	1931	1932	1933	1934
Cigarettes: Philippine Islands	17, 767 (1) 1, 900, 864 157, 877	9, 528 11, 670 (1) 2, 055, 810 162, 208 216, 934 176, 102	4, 431 (1) 2, 191, 861 76, 266	19, 238 3, 933 (1) 1, 823, 933 63, 715 31, 071 137, 494	4, 207 6 3, 181, 621

¹ Included in "All other manufactures."

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States and Monthly Summary of Foreign Commerce of the United States.

Table 165.—Tobacco used in manufacturing cigars, cigarettes, and other products, 1919-33 1

	Cigs	ars	Cig	arettes	Tobacco and	m-1-1
Calendar year	Large Small		Large	Small	snuff	Total
1919 1920 1921 1922 1923 1924 1924 1925 1926 1927 1928 1929 1929 1930	183, 042, 903 153, 792, 423 149, 363, 275 157, 837, 176 151, 356, 058 147, 530, 760 151, 049, 170 151, 049, 265 149, 993, 168 150, 878, 378 136, 749, 916 126, 611, 200	Pounds 3, 055, 055 2, 552, 097, 051 2, 987, 051 2, 345, 976 1, 915, 384 1, 470, 374 1, 322, 339 1, 480, 667 1, 296, 722 1, 250, 740 1, 151, 057 1, 016, 997 1, 054, 270 745, 245	Pounds 152, 620 141, 318 140, 822 142, 044 156, 436 137, 929 144, 962 108, 497 95, 961 87, 632 92, 788 65, 333 43, 171 18, 347 17, 325	Pounds 197, 880, 881 176, 739, 478 191, 004, 707 169, 455, 096 200, 238, 245 217, 562, 885 244, 170, 315 267, 475, 086 200, 368, 023 310, 070, 927 346, 450, 363 329, 919, 304 296, 010, 925 326, 076, 032	Pounds 307, 575, 503 306, 360, 085 325, 826, 978 325, 509, 608 328, 888, 700 322, 745, 284 325, 109, 202 317, 399, 077 301, 314, 291 298, 176, 363 207, 953, 440 294, 812, 985 286, 816, 510 279, 875, 778	Pounds 670, 921, 110 688, 835, 861, 633, 731, 981 646, 815, 999 689, 035, 941 633, 858, 440 713, 428, 207 774, 625, 709 779, 806, 202 752, 403, 657 690, 133, 809 710, 668, 377

¹ The quantities given are unstemmed equivalent of all kinds of tobacco used. Stemmed leaf and scrapsetc., used in manufacturing have been converted to unstemmed equivalent at the ratio of 3 pounds stemmed to 4 pounds unstemmed; in respect to leaf used in the manufacture of tobacco and snuff, prior to 1928 no conversion factor was used but in this table all figures are compiled on the conversion basis named.

Bureau of Internal Revenue, Treasury Department.

TABLE 1	66.—Toba	cco prod	ucts 1	nanu	facture	ed, 1	919–33		
Plug	Twist	Fine cut	Schev	rap ving ¹	Smoki	ng i	Snuff		Total
138, 563, 258 113, 384, 374 120, 174, 363 120, 798, 439 111, 477, 092 111, 390, 766 109, 766, 342 103, 918, 416 100, 646, 047 96, 744, 046 86, 273, 517	Pounds 11, 290, 488 11, 765, 807 9, 261, 035 10, 947, 547 10, 665, 185 9, 917, 988, 281 8, 891, 649 7, 988, 281 8, 891, 640 7, 623, 716 6, 377, 436 4, 918, 034 5, 041, 990	6, 892, 417 7, 140, 828 6, 780, 581 7, 151, 246 6, 984, 728 6, 286, 483 5, 186, 304 5, 555, 620 5, 089, 410	61, 22 50, 00	35, 195 30, 201	228, 566 219, 270 222, 72 243, 354 246, 99 247, 730 246, 430 237, 930 231, 13- 229, 501 182, 94 190, 980	3, 655 3, 561 3, 045 5, 372 4, 139 3, 832 3, 677 4, 105 5, 163 3, 383 7, 238 5, 528	35, 007, 8 34, 348, 9 34, 638, 136, 4 39, 228, 2 39, 029, 0 37, 841, 2 40, 475, 3 41, 127, 4 40, 765, 8 39, 854, 3 35, 994, 3	882 141 117 106 108 108 108 108 108 108 108 108	Pounds 424, 008, 785 412, 622, 566 419, 506, 105 419, 506, 105 414, 178, 378 413, 872, 969 410, 596, 322, 980 381, 199, 880 371, 765, 909 347, 278, 744 342, 113, 160
			Ciga	rs ²			Ciga	ret	tes
alendar year		than 3 po	than 3 pounds more than pounds i				than 3	more than 3	
	Plug Pounds 141, 637, 895 138, 563, 258 113, 384, 374 120, 174, 363 120, 798, 439 111, 477, 092 111, 390, 766 109, 766, 342, 010 100, 646, 047 96, 744, 046 86, 273, 517 76, 652, 810 61, 945, 173	Plug Twist Pounds 141, 637, 6815 113, 286, 258 113, 286, 288 113, 286, 288 11, 290, 488 113, 384, 374 120, 174, 363 120, 174, 363 111, 390, 487, 547 120, 788, 439 111, 390, 766 111, 390, 766 109, 766, 342 103, 918, 416 109, 766, 342 100, 646, 947 96, 744, 946 86, 273, 517 76, 652, 810 61, 946, 173 61, 186, 173 61, 361, 495 61, 361, 495 61, 361, 495 61, 361, 495	Plug Twist Fine cut Pounds Pounds 14, 167, 895 11, 290, 488 8, 165, 865 11, 863, 258 11, 765, 807 8, 689, 999 113, 384, 374 9, 261, 035 6, 892, 615 120, 174, 363 10, 947, 547 6, 892, 417 120, 798, 439 10, 665, 185 7, 140, 238 111, 477, 092 9, 901, 542 6, 780, 681 111, 390, 766 9, 749, 836 7, 151, 246 109, 766, 342 9, 179, 98 6, 984, 728 103, 918, 416 7, 988, 221 6, 286, 433 100, 646, 047 8, 891, 640 5, 186, 304 86, 273, 517 7, 623, 716 5, 089, 410 61, 361, 361, 495 5, 041, 990 3, 120, 427	Plug Twist Fine cut chew Pounds	Plug Twist Fine cut Scrap chewing 1 Pounds Pounds 11, 280, 488 8, 165, 865 11, 280, 488 8, 165, 865 1120, 1765, 807 8, 880, 999 113, 384, 374 9, 261, 035 6, 892, 615 120, 174, 363 10, 947, 547 6, 892, 417 120, 798, 439 10, 665, 185 7, 140, 828 111, 477, 092 9, 901, 542 6, 780, 581 111, 390, 766 342 9, 179, 089 6, 74, 792 9, 916, 542 6, 984, 728 100, 646, 047 8, 891, 640 5, 186, 304 96, 744, 946 8, 187, 608 5, 555, 620 16, 652, 810 6, 374, 438 10, 646, 173 17, 625, 176, 652, 810 6, 377, 436 4, 170, 255 61, 285, 195 61, 945, 173 4, 918, 034 3, 354, 471 50, 080, 201 61, 361, 495 5, 041, 990 3, 120, 427 44, 724, 472 Weighing more than 3 pounds appunds alendar year Weighing more than 3 pounds	Plug	Plug	Plug	Pounds

	Ciga	rs ²	Cig	arettes
Calendar year	Weighing more than 3 pounds per 1,000	Weighing not more than 3 pounds per 1,000	Weighing more than 3 pounds per 1,000	Weighing not more than 3 pounds per 1,000
1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1982. 1983.	8, 096, 758, 663 6, 726, 095, 483 6, 722, 354, 177 6, 950, 247, 389 6, 597, 676, 535 6, 463, 193, 108 6, 498, 641, 233 6, 519, 004, 960 6, 373, 181, 751 6, 518, 533, 042 5, 893, 890, 418 5, 347, 921, 293	Number 713, 235, 870 633, 222, 232 670, 482, 748 632, 906, 638 505, 305, 490 530, 714, 332 447, 089, 170 412, 314, 795 439, 419, 390 415, 535, 410 419, 880, 335 833, 996, 782 278, 748, 580 209, 514, 620	Number 31, 888, 910 28, 038, 552 14, 513, 266 17, 450, 458 16, 054, 236 17, 428, 807 13, 239, 765 11, 432, 360 10, 403, 004 9, 952, 480 7, 366, 925 5, 159, 660 3, 373, 577 2, 845, 705	Number 53, 119, 784, 225, 47, 459, 1015, 0a5 55, 085, 011, 560 55, 763, 022, 618 66, 715, 830, 430 72, 708, 989, 025, 2247, 100, 347, 92, 096, 973, 926, 989, 031, 619, 108, 705, 505, 650, 622, 382, 380, 846, 122, 382, 380, 846, 114, 874, 217, 470

¹ Prior to 1931, scrap chewing was included with smoking tobacco.
² Cigars produced in and removed for domestic consumption from bonded manufacturing warehouses are not included.

Bureau of Internal Revenue, Treasury Department.

Table 167.—Tobacco, unmanufactured: International trade, average 1925-29, annual 1931-33

		۵	00 1001					
				Calendar	year			
Country	Average	1925–29	19	031	198	32	19	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES United States Netherlands Indies.	1,000 pounds 525, 232 170, 071	1,000 pounds 78, 243 11, 967	1,000 pounds 524, 472 178, 565	1,000 pounds 74, 452 7, 870	1,000 pounds 411,159 163,604	1,000 pounds 56, 905 10, 656	1,000 pounds 438, 936 286, 917	1,000 pounds 57,253 2 5,456
Greece	109, 224 78, 023 67, 864	3 40 0 3,869 0 674	94, 897 48, 969 83, 264 54, 205 53, 691	0 2, 251 0 790	77, 827 463, 590 59, 189 45, 176 50, 521	0 1, 529 0 1, 870	76, 594 457, 939 44, 299 49, 629 37, 250	0
Dominican Republic	40, 432 36, 528	16, 192 0 10, 374 5 162	40, 294 36, 423 15, 011 30, 551 20, 794	11, 002 0 9, 304	36, 869 31, 426 9, 779 24, 814 13, 958	15, 910 0 12, 300 0	36, 568 12, 476 29, 785	12, 027 0 5, 399
Paraguay Hungary Union of Soviet Socialist Republics Yugoslavia Ceylon	9, 873 4, 994 2, 243	7, 393 0 766 70	20, 624 6, 389 6, 490 2, 584	6, 605 0 454 872	26, 711 6, 991 12, 821 1, 622	1, 312 0 369	20, 166 11, 614 10, 176 2, 165	2, 128 0 221
Total	1, 252, 804	129, 750	1, 217, 223	113, 600	1, 036, 057	100, 851	914, 514	82, 485
PRINCIPAL IMPORTING COUNTRIES								
Germany United Kingdom China France Netherlands Spain Belgium Czechoslovakia Poland Austria Argentina Australia c Canada Egypt Italy Switzerland Japan Sweden Denmark Irish Free State Finland Norway	24, 787 403 3, 115 82 7 723 2, 111 417 7 5, 467 7 7, 833 9, 952 166 2 2 269 0 0	217, 778 202, 589 104, 543 92, 321 70, 090 53, 921 45, 005 33, 809 31, 367 22, 945 21, 629 16, 639 16, 165 12, 832 12, 099 11, 835 8, 934 7, 094 5, 037	657 8, 804 11, 754 1, 129 4, 888 0 685 0 131 2, 349 0 6, 706 6, 706 0 0 9, 801 1, 766 182 0 0	158, 258 185, 997 166, 609 111, 876 65, 419 49, 846 22, 800 22, 432 22, 933 14, 323 13, 677 6, 604 16, 692 12, 849 13, 481 11, 307 4, 665 6, 665	9, 393 13, 111 2, 091 4, 228 0 551 0 922 1, 753 627 0 7, 916 304 1, 415 211 276 0 0	179, 057 166, 126 79, 757 106, 583 171, 925 88, 211 49, 034 49, 034 49, 034 13, 758 15, 119 10, 262 12, 548 8, 833 16, 037 14, 565 6, 727 5, 079 5, 040	672 14, 468 20, 905 1, 202 3, 934 0 0 83 2, 764 576 0 9, 511 10 0 0 8, 328 3, 135 219 10 0 0	185, 662 201, 327 54, 591 85, 850 76, 678 58, 742 44, 004 30, 060 15, 832 24, 506 22, 299 14, 632 112, 019 6, 347 18, 560 8, 927 15, 119 16, 516 6, 053 4, 928
Total	54, 810	1, 056, 850	56, 170	1, 050, 609	53, 676	931, 847	66, 047	922,000

Bureau of Agricultural Economics; official sources. Tobacco comprises leaf, stems and strippings, but not snuff.

¹ Preliminary. ² Java and Madura only.

^{3 3-}year average.
4 Source: Turkish Legation.
5 2-year average.
6 Year ended June 30.

STATISTICS OF FRUITS AND VEGETABLES

Table 168.—Almonds: Production and average price per ton received by producers, California, 1925-34

Item	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
Production_short tons Pricedollars Farm value, basis aver-	7, 500 400	16, 000 300	12,000 320	14, 000 340	4, 700 480	13, 500 200	14, 800 176	14, 000 165	12,900 186	10, 900 180
age price1,000 dol	3,000	4,800	3,840	4,760	2, 256	2, 700	2,605	2, 310	2,399	1,962

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

Table 169.—Apples: Production, car-lot shipments, prices, and foreign trade, United States, 1919-34

	Produ	ction		Car-lot ments		Foreign	trade,	year beg	ginning July 2 3			
			Weight- ed av- erage	crop of sho	f year	3	Domest	ic expor	ts	Im- ports,	Net ex	ports 4
Year	Total	Com- mer- cial ¹	price per bushel received by pro- ducers	Cars	Equivalent bushels	Fresh	Dried	Dried in terms of fresh	Canned in terms of fresh	fresh and dried in terms of fresh	Total	Per- cent- age of pro- duc- tion
1010	1,000 bushels 1 36, 561	1,000 bushels	Dollars	Num- ber	1,000 bushels	1,000 bushels	1,000 pounds	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	Per c+nt
1919 1919 1920 1921 1922 1923	140, 786 207, 313 95, 478 189, 776 180, 968	103, 107 66, 274 101, 282		116, 117 89, 559 113, 961	58, 148 68, 299	3, 282 5, 269	12, 431 12, 817	1,881 1,295 1,335		849 142 1, 353 189 132	9, 734 3, 224 6, 415	4.7 3.4 3.4
1924 1925 1926 1927 1928 1928	152, 967 160, 049 151, 752 5 227, 043 115, 625 176, 721 126, 433	100, 123 121, 481 78, 327	.90 1.40	127, 804 133, 550 93, 094	76, 983 80, 704 58, 346	11, 015 21, 293 9, 430	24, 833 32, 670 21, 704	2, 587 3, 403 2, 261	538 675 573	74 84 154	14, 066 25, 287 12, 110	9.2 11.1 10.4
1929 1930 1931 1932 1933 1934	133, 318 153, 372 202, 477 140, 775 142, 981 119, 855	102, 058 106, 025 85, 575 74, 962	1.02 .65 .62 .78	109, 794 101, 731 77, 422 62, 344	71, 472 63, 079 49, 920 40 218	20, 341 18, 030 13, 754 12, 259	38, 121 31, 557 36, 601	3, 971 3, 287 3, 813	640 695 748	103 82 6	24, 849 21, 930 18, 309	16.2 10.8 13.0

¹ Included in "Total crop." By commercial crop is meant that portion of the total crop which is sold

¹ Included in "Total crop." By commercial crop is meant that portion of the total crop which is sold for consumption as fresh fruit.

2 Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 1927-34; and official records of the Bureau of Foreign and Domestic Commerce.

3 Dried and canned are converted to terms of fresh apples on following bases: 1 pound of dried is equivalent to about 5 pounds fresh; 1 pound of canned is equivalent to about 2 pounds fresh; 48 pounds fresh equal 1 bushel. No reexports reported.

4 Total exports (domestic plus foreign) minus imports. Beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.)

5 Includes 6,724,000 bushels in 1926 and 220,000 bushels in 1932 not harvested on account of market conditions. Prices and value are computed on the harvested crop.

Prices and value are computed on the harvested crop.

ditions. Prices and value are compared to Preliminary.

December forecast of total shipments from 1934 crop. Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. See introductory text. Italic figures are census returns. Prices to producers are based upon returns from crop reporters.

Table 170.—Apples: Production and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934

producers, by Sidies,	, average 1927–31, and annual 1933 and 1934									
			Prod	luction			Price fo	or erop		
State and division		Total		Co	mmercia	11	of-			
	A ver- age 1927–31	1933	1934 ²	Aver- age 1927-31	1933	1934 2	1933	1934 2		
Maine	1,000 bushels 1,661 877 789 2,535 309 996 16,836 3,191 8,909	1,000 bushels 1, 884 1, 131 1, 027 3, 486 350 1, 184 16, 060 3, 380 7, 293	1,000 bushels 556 312 255 1, 435 97 356 11, 844 2, 070 8, 554	1,000 bushels 1, 129 597 507 1, 808 205 659 11, 689 2, 188 3, 523	1,000 bushels 1,017 849 675 2,490 231 855 9,600 2,145 2,154	1,000 bushels 368 235 190 1,085 76 276 8,554 1,440 3,400	Dollars 0. 69 . 73 . 76 . 89 . 98 . 98 . 94 . 92	Dollars 1. 28 1. 50 1. 67 1. 37 1. 55 1. 58 1. 09 1. 24		
North Atlantic	36, 101	35, 795	25, 479	22, 305	20,016	15, 624	. 90	1.09		
Ohio Indiana Illinois Michigan Wisconsin Minnesota Iowa Missouri South Dakota Nebraska Kansas	6, 653 1, 895 4, 728 6, 261 1, 661 976 1, 483 2, 549 144 529 1, 305	4, 380 819 2, 200 8, 651 1, 938 960 1, 425 3, 132 68 370 1, 431	4, 032 1, 020 2, 162 6, 464 1, 204 339 962 1, 534 34 209 783	1, 975 642 3, 175 3, 990 390 114 276 1, 317	1,500 234 1,600 5,184 408 99 255 1,620	1, 400 306 1, 610 4, 224 258 38 192 780 100 513	.92 1.02 .99 .70 .71 1.03 .76 1.32 1.02	1. 05 1. 11 1. 21 . 86 1. 04 1. 30 1. 25 1. 12 1. 50 1. 33 1. 25		
North Central	28, 183	25, 374	18, 743	12, 981	11,999	9, 421	. 82	1.04		
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia	1, 336 2, 056 12, 914 7, 001 3, 386 271 1, 005	932 1, 312 10, 900 4, 200 5, 254 279 1, 150	688 1, 102 9, 275 3, 630 3, 525 244 874	1, 099 1, 355 8, 040 3, 918 625	636 657 5, 250 2, 100 1, 011	493 615 6, 562 2, 475 691	.81 .75 .71 .69 .65 1.14	1. 00 . 92 . 79 . 97 . 85 1. 11 1. 03		
South Atlantic	27, 969	24, 027	19, 338	15, 413	10,008	11, 126	. 71	. 86		
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	2, 235 1, 941 645 175 1, 660 21 358 145	2, 340 2, 194 648 174 1, 925 22 350 98	934 1, 748 588 133 1, 715 12 348 134	367 265 887 58	288 228 1,074 60	118 186 956	. 87 . 82 . 94 1. 22 . 71 1. 22 . 76 1. 10	. 96 . 94 1. 40 1. 27 . 85 1. 16 . 88 1. 18		
South Central	7, 179	7, 751	5, 612	1,577	1,650	1, 322	. 83	. 97		
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	485 5, 426 49 2, 103 810 74 750 47 32, 306 4, 981 9, 839	525 5, 244 50 1, 454 285 51 313 39 29, 240 3, 500 9, 333	358 3, 312 28 1, 354 1, 240 63 554 36 32, 300 4, 938 6, 500	369 4, 487 1, 922 571 28 531 27, 476 3, 365 5, 420	264 3,500 1,300 168 15 219 20,000 1,800 4,023	212 2, 976 1, 268 744 24 403 25, 500 3, 100 3, 440	. 76 . 65 . 92 . 58 1. 22 1. 76 . 90 1. 20 . 75 . 64 . 61	.87 .87 1.52 .85 .96 1.71 .96 1.29 .78 .69		
Western	56, 871	50, 034	50, 683	44, 169	31, 289	37, 667	.71	.79		
United States	156, 303	142, 981	119, 855	96, 445	74, 962	75, 160	. 78	.91		

¹ Included in "Total crop." By commercial crop is meant that portion of the total crop which is sold for consumption as fresh fruit.

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 171.—Apples: Weighted average auction price per box, New York, 1930-31 to 1934-35

Variety and season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aver- age
Gravenstein: 1930-31 1931-32	Dol. 2.17 2.27	Dol. 2.09	Dol. 1.81 1.35	Dol.	Dol.	Dol.	Dol.	Dol.		Dol.	Dol.	Doi.	Dol.	Dol. 2.06
1931-32	1.60	2. 16 1. 21	1.57											2.08
1932-33 1933-34 1934-35	1.92	1.58	1.31											1. 37 1. 52
1934-35	2,11	2.03												
Winter Ba- nana:														İ
1930-31		2.00	1.68	1.53	1.38	1.44	1. 37	1. 57		1.59				1.63
1930-31 1931-32 1932-33		2.06	1. 25	1.30	1.18	1.27	1.09	1.58		.90	0.85			1.30
1932-33		1.25	1.34	1.00 1.18	1. 10	.71		1. 15						1. 25
1933-34 1934-35		1.59	1.33 1.43	1.36	1. 10		1.03							1. 25
Daliaioura 1		1	[]									[
1930-31 1931-32 1932-33 1933-34 1934-35			2.70	2.49	2.56	2. 58	2. 51 1. 88	2.40	2.39	2.41	2.45	2.03	1.88	2.44
1931-32			2.38 2.12	2.09 1.71	2.06 1.64	2. 12 1. 61	1. 88	2. 05 1. 44	2.09 1.58	2.26 1.94	1.94	1.70		2.07
1932-33			2. 43	1.85	1.94	2, 13	2. 43	2.48	2.38	2.36	1. 92 2. 21	1.79	.80 1.51	1.63 2.18
1934-35			2.03	1.90	1.93	1.90		2. 10	2.00	2.00	2. 2.	1.00	1.01	2. 10
									ļ					
1930-31 1931-32 1932-33 1933-34			2. 23 1. 65	1.80	1.82 1.24	1.69	1.77	1.05	. 88	1.30				1.86
1932-33			1.99	1.40	1.36	1. 15	1. 09	1.00	.50	.80	70			1.39
1933-34			1.86	1.50	1.36 1.33	1.35	1. 25	1. 25						1.46
1934-35		2.50	1.68	1.47	1.57	1.39								
McIntosh: 1930-31			1.75	2.02	1.96	1.84	1.70	1. 78	2.01	2.33	2, 60		ļ	1.92
1931-32			1.61	1.92	2.04	1.96	1.82	1.84	2.05	2.05	1.99	2.36		1.92
1932-33			1.65	1,35	1. 29	1.32	1. 25	1.16	1.16	1. 23	1.43	1.96		1.31
1931-32 1932-33 1933-34 1934-35 Rome Beauty:		-=-==-	1.47	1.15	-5-55-		1. 39	1. 57	1.78	2.18				1.53
Roma Requity:		1.88	1.60	1.74	1.76	1.95								
1930-31	l		2. 27	1.98	1.79	1.70	1.68	1.76	1.89	1.99	2.07	1.88	1.29	1.84
1931-32			2.35	1.76	1,54	1.51	1.42	1.36	1.38	1.39	2.07 1.30	1. 26	.81	1.44
1932-33			1.68 2.23	1.52 1.64	1.30	1.39 1.72	1.32 1.75	1. 28 1. 86	1. 18 1. 72	1. 21	1.28 2.04	1.38	1. 20	1.30
Rome Beauty: 1930-31 1931-32 1932-33 1933-34 1934-35			1.64	1.68	1.60	1.63	1.70	1. 00	1. 72	1. 91	2.04	1. 48	1. 20	1.73
TWO DAY														
zenberg:	1	ļ	1	0.00	2.08	0.10	1.96	7 00			Ì	Į.		
1930-31				2.02 1.87	1.82	2.10 1.66	1.45	1.80 1.45	1.87	1.68 1.35	07			2.01 1.73
1932-33				1.55	1.46	1.43	1.23	1. 28	1, 22	1. 24	. 97 1. 19			
1930-31 1931-32 1932-33 1933-34				1.77	1.63	1.87	1.96	1.64	1.60	1.45				1.77
1934-35 Yellow New-				1.70	1.74	1.60								·}
4	i	l	ĺ		l	l	ĺ		l	1	1	l	ĺ	1
1930-31 1931-32 1932-33 1933-34 1934-35				2.04	2.79	1.84	1.95	1.87	1.99	2.11 1.88	2.32	2.49	ļ	2, 24
1931-32				1.84	1.96	1.80	1.38 1.25	1.62	1.70	1.88	2.06	2.08	1. 24	1.94
1932-33				1.62	1.41 2.20	1.32 1.81	1.63	1. 27	1.31 2.06	1. 48 2. 21	1.70 2.09	2. 19 1. 96	2.48 1.49	1.76
1934-35			1.50	1.52	1.66	1.61	2.00	1.00	2.00	2. 21	2.03	1.00	1. 20	1.00
				ĺ				ĺ						
1930-31 1931-32				1. 52	2.15 1.78	2. 16 1. 77	2.13 1.52	2.00 1.47	2. 16 1. 53	2. 23	2. 27 1. 42	2.08 1.52	2.09 1.48	2. 14 1. 53
1931-32				1.04	1. 35	1.49	1.38	1.36	1. 31	1. 52	1.45	1.60	1.73	1.50
1933-34					1.74	1.72	1.94	1.98	1.92	1.90	1. 75	1.70	1.50	1,76
1934-35				1. 35	1.63	1.63]		.			.		
Summary: 1930-31	2.17	2.09	2.02	2.02	2.03	2.06	2.01	2.01	2 19	2. 21	2, 30	2.18	2.08	1 2.10
1931-32	2. 27	2. 16	1.70	1.78	1.77	1.77	1.60	1.65	2.12 1.72	1.74	1.60	1. 62	1.47	1 1.71
1931-32 1932-33 1933-34	1.60	1. 21	1.69	1. 55	1.49	1.51	1.38	1.37	1.41	1.57	1. 59	1.80	1.76	1 1. 5
1092.24	1.92	1.58	1.45	1.69	1.71	1.92	2.06	2. 19	2.07	2.15	2.00	1.80	1.50	1 1.90
1934-35	2.11	1.89	1.71	1.74	1.80	1.76				t	1		1	

¹ Average for season includes a price in August for old-crop apples as follows: Delicious, 1933-34, \$0.67; Winesap, 1930-31, \$1.78; 1931-32, \$0.94; 1932-33, \$1.55; 1933-34, \$1.44.

Bureau of Agricultural Economics; compiled from New York Daily Fruit Reporter, deciduous section. Prices are weighted by number of boxes sold.

Table 172.—Apples: Average price per bushel received by producers, United States. 1925-26 to 1934-35

Year	June 15	July 15	Aug. 15	Sept. 15	Oet. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Ма у 15	Weight- ed aver- age
1925-26 1926-27 1927-28 1927-28 1928-29 1929-20 1930-31 1931-82 1932-33 1933-34 1934-35	Cents 201. 4 168. 7 140. 0 188. 7 153. 1 173. 6 131. 5 92. 1 88. 7 121. 8	158. 7 133. 8 144. 4 156. 0 160. 5 144. 8 107. 9 86. 2 86. 9	130. 7 103. 8 135. 8 105. 5 138. 9 106. 3 77. 4 65. 1 74. 7	112. 5 88. 4 130. 7 96. 6 131. 0 103. 2 70. 7 57. 4	120. 5 80. 2 134. 7 99. 4 137. 9 98. 4 58. 9	127. 7 81. 6 141. 8 107. 9 135. 6 96. 7 61. 3 57. 1	137. 4 87. 7 152. 4 118. 5 143. 4 98. 8 64. 7 61. 7 80. 0	161. 7 124. 1 148. 3 103. 8 66. 4 65. 1 89. 4	146. 3 98. 8 168. 3 129. 9 154. 0 106. 0 66. 4 66. 3	139. 8 100. 0 177. 0 134. 1 155. 2 105. 5 71. 2	143. 2 103. 8 183. 3 133. 5 150. 9 117. 1 79. 2 78. 6	148. 2 113. 5 190. 6 147. 9 168. 2 121. 9 82. 7 84. 9	89. 5 139. 8 108. 1 138. 6 102. 2 65. 2

¹ Preliminary.

Bureau of Agricultural Economics. Based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 133. Only monthly prices are comparable.

Table 173 .- Apples: Car-lot shipments in eastern and western areas and United States by months, 1925-26 to 1934-35

State group						Crop	-move	ment s	eason	1				
and season	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Total
Total eastern: 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1933-34. 1933-34. Total western:	Cars 379 165 243 196 512 388 339 231 247 99	1,507 1,867 1,697 1,915 1,714 1,101 1,008	2, 035 2, 480 2, 881 2, 651 1, 732 1, 015 805 579	11, 728 7, 754 11, 645 10, 426 6, 194 7, 121 4, 866 4, 507	26, 133 15, 868 23, 355 18, 068 14, 370 18, 624 11, 100 8, 014	8, 210 5, 634 6, 990 9, 139 4, 496 3, 212	4, 358 2, 310 3, 512 2, 438 2, 820 3, 151 1, 936	5, 110 2, 353 3, 665 2, 780 3, 161 4, 168 2, 474 2, 126	5, 422 1, 966 2, 899 2, 581 2, 715 3, 947 2, 261	3, 675 1, 434 2, 170 2, 440 1, 857 2, 837 1, 652	2, 279 870 1, 258 1, 307 666 1, 348	1, 295 504 766 602 357 574 636	476 199 284 303 91 228 281	51, 439 43, 256 54, 205
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. Total United States:	54 95 10 34 2 32 61 44 14 3 77	1, 569 308 1, 585 325 1, 412 1, 435 1, 509	1, 352 1, 059 1, 449 1, 140 1, 198 966 882 995	9, 222 4, 352 7, 760 3, 570 7, 165 5, 890 2, 3, 902 1, 833	22, 546 19, 621	9, 019 10, 182 11, 564 9, 014 10, 761 5, 481 6, 320 6, 031	4,007 3,653 4,797 3,544 5,415 4,188 4,192 5,187	2, 859 2, 962 4, 109 3, 443 4, 787 4, 085 3, 921 4, 665	2, 598 2, 934 4, 850 3, 816 4, 521 4, 344 3, 698	1, 673 2, 066 3, 248 2, 777 3, 896 3, 635 3, 368	1, 317 1, 485 1, 686 2, 355 2, 430 2, 401 1, 864	1, 315 944 1, 372 1, 714 1, 838	412 665 250 383 725 916 553	54, 371 48, 679 64, 822 51, 362 66, 538 47, 526 44, 587
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 2 1934-35 2	433 260 253 230 514 420 400 275 261 3 176	1, 815 3, 452 2, 022 3, 327 3, 149 2, 610 1, 512	3, 387 3, 539 4, 330 3, 791 2, 930 1, 981 1, 687 1, 574	20, 950 12, 106 19, 405 13, 996 13, 359 13, 011 8, 768	45, 321 33, 556 45, 901 37, 689 36, 852 30, 910 24, 078	20, 085 23, 251 17, 109 19, 774 14, 648 17, 751 14, 620 10, 816 9, 243 7, 771	8, 365 5, 963 8, 309 5, 982 8, 235 7, 339 6, 128 6, 795	7, 969 5, 315 7, 774 6, 223 7, 948 8, 253 6, 395 6, 791	8, 020 4, 900 7, 749 6, 397 7, 236 8, 291 5, 959	5, 348 3, 500 5, 418 5, 217 5, 753 6, 472 5, 020	3, 596 2, 355 2, 944 3, 662 3, 096 3, 749 2, 860	2, 355 1, 819 1, 710 1, 974 2, 071 2, 412 1, 992	888 864 534 686 816 1, 144 834	

 ¹ Crop movement season covers 13 months, from June of one year through June of the following year.
 2 Beginning January 1934, figures are preliminary.
 3 Includes 3 cars shipped in May.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 174.—Apples: L. c. l. price per bushel. New York, 1930-31 to 1934-35

Variety and season	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Aver- age
Baldwin: 1930-31 1931-32 1932-33 1933-34 1934-35 McIntosh (New York State): 1930-31 1931-32 1932-33 1933-34 1934-35 Greening: 2 1930-31 1931-32 1932-33 1933-34 1934-35	Dollars	Dollars 1 1, 19	Dollars 1, 14 1, 85 , 85 1, 72 1, 78 1, 18 1, 37 2, 05 1, 17 1, 28 , 76 1, 21	Dollars 1, 25 1, 25 1, 25 1, 72 1, 72 1, 72 1, 10 1, 46 1, 98 1, 33 1, 26 78 1, 18	Dollars 1 1, 36 1, 91 1, 08 89 1, 53 1, 85 1, 15 1, 15 1, 16 71 1, 134	Dollars 1 1, 53 . 33 1, 11 1, 04 1, 60 1, 36 1, 07 75 1, 155	Dollars 1 1, 59 1, 06 1, 30 1 1, 97 2, 11 1, 25 1, 70 1, 64 1, 23 93	Dollars 2, 00 1, 23 1, 09 1, 33 2, 12 2, 12 1, 53 1, 97	Dollars 1 2,09 1 1,19 1,02 1,44	Dollars 1, 52 1, 02 2, 98 1, 06 1, 82 1, 81 1, 19 1, 48 1, 28 1, 18 1, 18 1, 18 1, 18 1, 18 1, 18 1, 18 1, 18
1934-35	1.13	1.11	1.30	1, 23						

¹ Less than 10 quotations

Table 175.—Apples: Car-lot shipments, by State of origin, 1924-25 to 1933-34

Crop-movement sesson 1 STREE 1024-25 1025-26 1926-27 | 1927-28 | 1928-29 | 1929-30 | 1930-31 | 1931-32 | 1932-33 | 1933-34 * Cars Cars Cars Cars Сатв Cars Cars. Cars Cars Cars 1, 333 2, 115 1, 320 660 889 227 989 154 1, 216 795 Maine New Hampshire Vermont Massachusetts 805 408 339 515 355 710 71 220 538 609 472 324 221 316 563 394 RRO 490 591 975 48 587 302 477 208 388 275 180 622 9, 253 331 15, 429 9, 090 New York..... New Jersey..... Pennsylvania..... 16,631 29, 499 21,680 10,030 13,671 10, 579 6, 663 354 906 200 130 441 340 701 158 104 4, 988 2, 796 1, 547 1, 120 1, 706 2, 486 3,005 2, 401 2, 765 3, 313 2, 913 1,643 Ohio_____Indiana 1, 739 219 1,046 1,022 837 274 528 186 210 611 112 98 407 5, 867 6. 561 6, 149 4, 328 2,552 2,002 5, 046 2, 651 2, 326 4, 053 3, 388 4,779 1 884 870 Illinois_____ 2, 084 249 772 942 1,884 Michigan..... 3, 443 6,008 2,819 1,393 432 1,758 516 Wisconsin.... 253 420 387 266 505 151 139 138 1, 295 1, 252 541 249 2, 939 217 Missouri..... 3, 056 2,015 736 758 1, 294 1, 458 670 Kansas____ 1, 165 675 1, 352 1, 352 1, 722 20, 282 6, 608 1, 896 2, 099 820 1, 353 724 819 402 Delaware..... Maryland 1.384 1, 239 1, 333 2, 491 18, 674 1,792 1,852 1, 378 7, 402 2,048 17,172 976 693 7, 397 3, 927 3, 191 8, 686 7, 054 5, 958 2, 638 Virginia... 16, 705 6,990 13,079 7, 393 1, 842 343 3,772 West Virginia.... 3, 762 3, 451 7, 385 3, 381 6,987 1, 265 123 Arkansas.... 629 417 331 331 252 95 237 388 Montana.... 29 149 527 201 2, 223 2, 401 864 5, 354 6, 508 2, 804 305 6, 972 4, 324 4,871 Idaho_____ Colorado_____ 7, 485 3, 677 7,709 2,228 7, 119 2, 322 1, 082 1,093 361 2, 877 785 683 3, 193 966 280 110 1, 112 467 New Mexico..... 428 611 196 1,089 45,217 479 14 Titah 338 198 450 30, 280 34, 558 2, 139 3, 847 30, 822 26, 311 1, 748 2, 811 374 34, 729 41, 317 34, 220 Washington.... 25, 156 35, 046 6, 422 5, 084 6, 447 6, 300 5, 515 4, 703 2, 531 3, 396 2,680 5, 624 3, 324 Oregon_____California_____ 020 3, 462 5, 953 3,930 Other States.... 1,950 1, 258 1,868 839 229 695 520 ዕሜର 127, 530 102, 801 109, 794 101, 731 77, 422 62, 267 Total _____ 103, 843 133, 550 93.094 127, 804

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not

included.

² Includes Rhode Island Greening and Northwestern Greening.

Bureau of Agricultural Economics: compiled from daily market reports from the Bureau representative at New York.

Average prices as shown are based on stock of good merchantable quality and condition, 2½ inches unless otherwise stated; they are simple averages of daily range of selling prices. Average for season is simple average of monthly averages.

¹ Crop-movement season extends from June of one year through June of the following year.

Preliminary.

Table 176.—Apples: Cold-storage holdings, United States, 1925-26 to 1934-35 BARRELS 1

			1						
Season	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	harrels	harrels	barrels	barrels	barrels	harrels	barrels	barrels	barrels
1925-26 1926-27 1927-28 1928-29 1929-30	885	barrels 3, 749	4. 245	3 855	3 157	2, 288	1, 307	617	22
026-27	484	3, 188	4, 245 4, 554	4, 077	3, 178	2, 152	1, 307 1, 286	650	22
927-28	449	1,864	2, 055 2, 889 2, 097	7.699	1, 266	846	501	262	12
928-29	652	2,978	2,889	2, 354	1, 678	1, 128	652	319	10
920-30	735	2, 978 2, 189	2,097	2, 354 1, 762	1, 316	897	481	229	9 (
930-31	500	1, 571	1, 456	1, 197	834	482	200	86	3
931-32	398	2, 285	2, 177	1, 944	1, 322	762	369	165	1 7
932-33	389	1, 571 2, 285 1, 242	1, 349	1, 944 1, 209	924	609	337	182	(
933-34	276	949	892	720	501	353	188	87	1 :
932-33 933-34 934-35	209	872	797						
			BUSHE	L BASK	ETS				
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	baskets	baskets	baskets	baskets	baskets	baskets	baskets	baskets	basket.
19 25-26	519	2, 056	2,419 2,713 3,905	2, 103	1,672	1, 138	672	329	1:
1926-27	352	2, 235	2,713	2,472	2, 037	1, 589	952	533	1
927-28	724	3, 309	3, 905	3, 177	2, 315 3, 204	1, 536	900	460	2
.928-29	1, 084	4, 932	5,057	4, 240	3, 204	2, 171	1, 308	590	2
929-30	1,793	- 6, 379	6, 613	5, 507	4,005	2,805	1,555	763	3
930-31	1,982	6, 748	6,946	5, 996	4, 469	2,855	1, 300	571	1
	2.032	- 6, 379 6, 748 9, 787 9, 881	6, 946 10, 817 10, 533	9, 681	7, 694 7, 213	1, 536 2, 171 2, 805 2, 855 5, 182 5, 237	1, 555 1, 300 2, 737 3, 268	1, 269 1, 691	4
932-32	7,212		1 10.533	9. 117	7, 213	5, 237	3,208	1, 691	6-
932-32	2,342	9,001	20,000	- 000					
1932-32 1932-33 1933-34	2, 342 2, 851	0.032	8,577	9, 117 7, 388	5, 680	3, 923	2, 062	200	
1927-28 1927-28 1928-29 1928-30 1930-31 1932-32 1932-33 1933-34 1934-35	1, 793 1, 982 2, 032 2, 342 2, 851 3, 370	8, 632 10, 858	8, 577 10, 555	7, 388	5, 680	3, 923	2, 002	230	29
1932-32 1932-33 1933-34 1934-35	2, 342 2, 851 3, 370	0.032	8, 577 10, 555	7, 388 	5, 680	3, 923	2,002	300	28
	1,000	1,000	8,577 10,555 Bo	0XES 2	1,000	1,000	1,000	1,000	1,000
	1,000	1,000 boxes	8,577 10,555 Bo 1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	1,000 boxes	1,000 bores
	1,000	1,000 boxes 9,165 0,593	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868	1,000 boxes 10,009	1,000 boxes	1,000 boxes 5,350 4 613	1,000 boxes 2,892	1,000 boxes 1, 1
	1,000	1,000 boxes 9,165 0,593	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868	1,000 boxes 10,009	1,000 boxes	1,000 boxes 5,350 4 613	1,000 boxes 2,892	1,000 boxes 1, 1
	1,000	1,000 boxes 9,165 0,593	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868	1,000 boxes 10,009	1,000 boxes	1,000 boxes 5,350 4 613	1,000 boxes 2,892	1,000 boxes 1, 1
	1,000	1,000 boxes 9,165 0,593	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868	1,000 boxes 10,009	1,000 boxes	1,000 boxes 5,350 4 613	1,000 boxes 2, 892 2, 312 2, 889 2, 224	1,000 boxes 1, 1 7 1, 2 6
	1,000	1,000 boxes 9, 165 9, 523 9, 074 12, 333 11, 045	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868	1,000 boxes 10,009	1,000 boxes	1,000 boxes 5,350 4,613 4,960 4,889 4,790	1,000 boxes 2, 892 2, 312 2, 889 2, 224	1,000 bores 1, 11 7 1, 2 6
	1,000	1,000 baxes 9, 165 9, 523 9, 074 12, 333 11, 045 15, 669	8,577 10,555 Be 1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137	1,000 boxes 10,009	1,000 boxes 7,898 7,298 7,023 7,995 7,282 11,371	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852	1,000 boxes 2, 892 2, 312 2, 889 2, 224 2, 446 3, 683	1,000 bores 1, 1 7 1, 2 6 7
	1,000	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873	8,577 10,555 Be 1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137 14,617	1,000 boxes 10,009	1,000 boxes 7, 898 7, 298 7, 023 7, 995 7, 282 11, 371 8, 789	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886	1,000 boxes 2, 892 2, 312 2, 889 2, 224 2, 446 3, 683 3, 392	1,000 bores 1, 1, 7 1, 2 6 7 1, 4 1, 3
	1,000	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 11,067	8,577 10,555 Be 1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137	1,000 boxes 10,009	1,000 boxes 7,898 7,298 7,023 7,995 7,282 11,371	1,000 boxes 5, 350 4, 613 4, 960 4, 889 4, 790 6, 852 5, 886 4, 462	1,000 boxes 2, 892 2, 312 2, 889 2, 224 2, 446 3, 683	1,000 bores 1, 1, 7 1, 2 6 7, 4 1, 3
	1,000	1,000 baxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472	8,577 10,555 Bo 1,000 boxes	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137 14,617 12,794	1,000 boxes 10,009	1,000 boxes 7,898 7,298 7,023 7,995 7,282 11,371 8,789 7,179	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886	1,000 boxes 2, 892 2, 312 2, 289 2, 224 2, 446 3, 683 3, 392 2, 463	1,000 boxes 1,10 7,10 1,22 63 7,0 1,43 1,33
1932-32 1932-33 1933-34 1934-35 1925-26 1925-27 1927-28 1928-29 1928-29 1929-30 1930-31 1931-32 1931-32 1933-34 1933-34	1,000	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 11,067	8,577 10,555 Be 1,000 boxes 13,041 15,083 17,452 15,235 21,287 16,849 14,852 13,874 18,037	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137 14,617 12,794	1,000 boxes 10,009	1,000 boxes 7,898 7,298 7,023 7,995 7,282 11,371 8,789 7,179	1,000 boxes 5, 350 4, 613 4, 960 4, 889 4, 790 6, 852 5, 886 4, 462	1,000 boxes 2, 892 2, 312 2, 289 2, 224 2, 446 3, 683 3, 392 2, 463	1,000 boxes 1,107 11,22 63 7(1,44 1,36
	1,000 boxes 1,091 1,809 1,043 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 bazes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	8,577 10,555 Bo 1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,874 18,037	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 12, 794 11, 857	1,000 boxes 10, 009 10, 435 9, 809 12, 388 10, 149 15, 347 11, 761 10, 124 9, 239	1,000 boxes 7, 898 7, 298 7, 023 7, 995 7, 282 11, 371 8, 789 7, 179 6, 591	1,000 boxes 5,350 4,613 4,960 4,889 4,700 5,852 5,886 4,462 3,766	1,000 boxes 2, 892 2, 312 2, 889 2, 224 2, 446 3, 683 3, 392 2, 463 1, 965	1,000 bores 1, 10 7; 1, 22 6; 7; 1, 4; 1, 3; 8;
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165,9523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	1,000 boxes 13,011 15,083 13,423 17,425 21,287 16,849 14,852 13,874 18,037	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137 14,617 12,794 11,857	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 10,124 9,239	1,000 boxes 7,898 7,298 7,093 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 4,790 6,855 5,886 4,462 3,766	1,000 boxes 2,892 2,312 2,889 2,446 3,683 3,392 2,463 1,965	1,000 boxes 1, 11 2, 66 7, 1, 4 1, 33 9, 8
925-26 926-27 927-28 928-29 929-30 930-31 931-32 932-33 933-34 934-35	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 baxes 9,165 9, 523 9, 074 12, 333 11, 047 12, 873 11, 067 17, 750	1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,87 18,037	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 11, 857	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 9,239	1,000 baxes 7,898 7,023 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886 4,463 3,766	1,000 boxes 2,892 2,312 2,224 2,446 3,683 3,392 2,465 1,965	1,000 boxes 1, 11 7 1, 22 6 7, 1, 4 1, 3 9 8
925-26 926-27 927-28 928-29 929-30 930-31 931-32 932-33 933-34 934-35	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 baxes 9,165 9, 523 9, 074 12, 333 11, 047 12, 873 11, 067 17, 750	1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,87 18,037	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 11, 857	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 9,239	1,000 baxes 7,898 7,023 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886 4,462 3,766	1,000 boxes 2,892 2,312 2,889 2,224 2,446 3,683 3,392 2,463 1,965	1,000 bores 1, 1 1, 2 6 7 1, 4 1, 3 9 8
925-26 926-27 927-28 928-29 929-30 930-31 931-32 932-33 933-34 934-35	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 17,750	1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,87 18,037	1,000 boxes 11,868 13,365 12,260 15,853 13,108 19,137 14,617 12,794 11,857 OTAL 3 1,000 bushels 25,568 28,068	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 9,239	1,000 boxes 7,898 7,298 7,023 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886 4,462 3,766	1,000 boxes 2,892 2,312 2,889 2,446 3,683 3,392 2,463 1,965	1,000 bores 1,17 1,2 6 7 1,4 1,3 8 8 1,000 bushe 1,8
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 17,750	1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,87 18,037	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 11, 857 1,000 1,	1,000 boxes 10,009 10,435 9,809 12,388 10,149 9,239 1,761 10,124 9,239	1,000 boxes 7, 898 7, 298 7, 023 7, 995 7, 282 11, 371 8, 789 7, 179 6, 591	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886 4,462 3,766 1,000 bushels 9,942 9,423 7,363	1,000 boxes 2,892 2,312 2,889 2,224 2,446 3,683 3,392 2,463 1,965	1,000 bores 1, 1, 1, 2 6 6 7 7, 1, 2 1, 4 1, 3 9 8 8
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	1,000 boxes 13,041 15,083 13,423 17,452 15,235 21,267 16,849 14,852 13,87 18,037	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 12, 794 11, 857 OTAL 3 1,000 bush568 28, 068 20, 534 27, 154	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 1,012 9,239 1,000 bushels 21,153 22,055 15,923	1,000 botres 7,898 7,298 7,093 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 6,855 5,886 4,462 3,766	1,000 boxes 2,892 2,312 2,889 2,463 3,683 3,392 2,463 1,965	1,000 bore: 1,1,7 1,2 6,7 1,4 1,3 8 8 1,000 bushe 1,8 1,1
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 17,750	1,000 boxes 13, 041 15, 083 17, 452 13, 874 18, 037 Tr.	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 12, 794 1,000 bushels 25, 536 28, 068 20, 534 27, 154 23, 902	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 1,012 9,239 1,000 bushels 21,153 22,055 15,923	1,000 botres 7,898 7,298 7,093 7,995 7,282 11,371 8,789 7,179 6,591	1,000 boxes 5,350 4,613 4,960 6,855 5,886 4,462 3,766	1,000 boxes 2,892 2,312 2,889 2,224 3,683 3,392 2,465 1,965	1,000 boxes 1,1 7,1,2 6,6 6,7 1,4 1,3 9,8 8 1,6 1,8 1,1,8 1,1,8
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165 9,523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	1,000 boxes 13, 041 15, 083 17, 452 13, 874 18, 037 Tr.	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 12, 794 11, 857 OTAL 3 1,000 bushels 25, 538 28, 068 20, 534 27, 154 23, 902 28, 725	1,000 boxes 10,009 10,435 9,809 12,388 10,149 15,347 11,761 1,012 9,239 1,000 bushels 21,153 22,055 15,923	1,000 boxes 7, 898 7, 298 7, 023 7, 995 7, 282 11, 371 8, 789 7, 179 6, 591 1,000 bushels 15, 900 15, 342 11, 097 13, 551 12, 778 15, 679	1,000 boxes 5,350 4,613 4,960 4,780 5,852 5,886 4,462 3,766 1,000 bushels 9,942 9,423 7,363 8,153 7,787 8,751	1,000 boxes 2, 892 2, 312 2, 289 2, 246 3, 683 3, 392 2, 463 1, 965 	1,000 boreer 1,1 7,2 6,4 1,3 9,8 8 1,6 1,1 1,1 1,3 1,6 1,1 1,1 1,3
925-26	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165,9523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	1,000 boxes 13,011 15,083 13,423 17,452 21,287 16,849 14,852 13,874 18,037 Tr	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 12, 794 11, 857 1,000 bushels 25, 568 20, 534 27, 154 23, 902 28, 725 30, 129	1,000 boxes 10,000 10,435 9,809 12,388 10,149 15,347 11,761 10,124 9,239 1,000 bushels 21,159 22,005 15,923 20,626 18,102 22,317 23,421	1,000 boxes 7,898 7,298 7,093 7,995 7,282 11,371 8,789 7,179 6,591 1,000 bushels 15,900 15,342 11,097 13,551 12,778 15,672 16,257	1,000 boxes 5,350 4,613 4,960 6,852 5,886 4,462 3,766 1,000 bushels 9,423 7,363 8,153 7,787 8,751 9,729	1,000 boxes 2,892 2,312 2,889 4,463 3,683 3,392 2,463 1,965 1,000 bushels 5,073 4,794 4,134 3,772 3,895 4,512 5,157	1,000 bore: 1,1,7 1,2 1,4 1,3 9 8 1,000 bushe 1,8 1,1 1,1 1,3 1,7
925-26	1,000 boxes 1, 091 1, 804 1, 854 901 2, 135 3, 203 2, 414 567 8, 279 1,000 bushels 4, 266 3, 612 3, 114 4, 893 4, 900 5, 618 6, 429 5, 922	1,000 baxes 9,162 9, 523 9, 074 12, 333 11, 045 15, 669 15, 472 11, 067 17, 750	1,000 boxes 13, 041 15, 083 11, 452 11, 267 16, 849 18, 037 Tr.	1,000 boxes 11, 863 13, 365 12, 260 15, 853 13, 108 19, 137 14, 617 12, 794 11, 857 OTAL 3 1,000 bushels 25, 536 28, 063 27, 154 23, 902 28, 725 30, 129 25, 539 125, 539	1,000 boxes 10,009 10, 435 9, 809 12, 388 10, 149 15, 347 11, 761 10, 124 9, 239 1,000 bushels 21, 153 22,005 15, 923 20, 626 18, 102 22, 317 23, 421 21, 109	1,000 boxes 7,898 7,023 7,998 7,023 7,928 11,371 8,789 7,179 6,591 1,000 bushels 15,900 15,342 11,097 13,551 12,778 15,672 16,257 14,244	1,000 boxes 5,350 4,613 4,960 4,889 4,790 6,852 5,886 4,463 3,766 	1,000 boxes 2,892 2,312 2,224 2,446 3,683 3,392 2,465 5,073 4,794 4,134 3,772 3,895 4,512 5,157 4,794 4,512 5,157	1,000 baret 1,1 7 1,2 6 6 1,4 1,3 9 8 1,000 bushe 1,8 1,1 1,1 1,2 1,2 1,2 1,2 1,1
	1,000 bazes 1,091 1,809 1,943 1,854 901 2,135 3,203 2,414 1,567 8,279	1,000 boxes 9,165,9523 9,074 12,333 11,045 15,669 15,472 12,873 11,067 17,750	1,000 boxes 13,011 15,083 13,423 17,452 21,287 16,849 14,852 13,874 18,037 Tr	1,000 boxes 11, 868 13, 365 12, 260 15, 853 13, 108 19, 137 12, 794 11, 857 1,000 bushels 25, 568 20, 534 27, 154 23, 902 28, 725 30, 129	1,000 boxes 10,000 10,435 9,809 12,388 10,149 15,347 11,761 10,124 9,239 1,000 bushels 21,159 22,005 15,923 20,626 18,102 22,317 23,421	1,000 boxes 7,898 7,298 7,093 7,995 7,282 11,371 8,789 7,179 6,591 1,000 bushels 15,900 15,342 11,097 13,551 12,778 15,672 16,257	1,000 boxes 5,350 4,613 4,960 6,852 5,886 4,462 3,766 1,000 bushels 9,423 7,363 8,153 7,787 8,751 9,729	1,000 boxes 2,892 2,312 2,889 4,463 3,683 3,392 2,463 1,965 1,000 bushels 5,073 4,794 4,134 3,772 3,895 4,512 5,157	1,000 bores 1, 11 7 1, 2 6 7 1, 4 1, 3 9 8

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments.

Mostly in eastern and central United States.
 Mostly western apples.
 I barrel is considered the equivalent of 3 boxes or 3 bushel baskets.

Table 177.—Apples: International trade, average 1925-29, annual 1930-33

					Calend	ar year				
Country	Average	1925-29	19	30	19	31	19	32	19	33 2
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES United States Canada Australia 3 France 4 Italy Netherlands Belgium Rumania Yugoslavia New Zealand	3, 626 2, 161 1, 876 1, 597 1, 309 1, 122 5 734	1,000 bushels 137 542 0 608 1 422 303 5 1 5 2	1,000 busheis 15,850 6,390 3,621 1,314 1,908 448 1,005 6 604 2,688 1,072	1,000 bushels 157 485 0 1,737 3 778 704 6 3 2	1,000 bushels 17,785 4,783 2,770 1,722 1,535 721 486 354 865 1,081	1,000 bushels 36 424 0 3,016 6 911 964 17 5	1,000 busehls 16,919 4,708 3,916 1,769 1,236 1,927 140 1,999 1,259	1,000 bushels 54 225 0 2,548 9 1,114 618	1,000 bushels 11,029 8,716 4,737 3,331 1,358 1,381 1,282 343 1,092	1,000 bushels 7 113 0 1,579 5 970 980
Total	28, 221	2, 047	34, 900	3, 896	32, 102	5, 391	34, 871	4,574	33, 269	3, 659
PRINCIPAL IMPORT- ING COUNTRIES United Kingdom Germany Sweden Denmark Irish Free State Egypt Norway Brazil Finland Cuba Poland	34 0 1 2 2 0 0 0 0 18	14, 247 8, 415 754 684 469 379 4 202 191 178 96 88	0 40 150 3 6 1 0 0 0 150	13, 583 11, 195 683 674 449 360 4 170 114 186 80 484	0 157 0 0 5 2 0 0 0 0 7	17, 007 5, 444 829 912 475 194 4 210 146 141 58 375	0 116 0 1 7 1 0 0 0 0 3	18, 078 11, 758 799 453 517 161 147 134 86 46 163	0 43 73 101 0 1 0 0 0	16, 615 9, 879 4, 449 354 401 164 94
Total	57	25, 703	350	27, 958	171	25, 791	128	32,342	218	28, 293

¹ Foreign weights are converted to bushels on the basis of 48 pounds per bushel; domestic, 1 barrel equals 3 boxes (or bushels).
2 Preliminary.
3 Year ended June 30.
4 Includes pears.
5 4-year average.
6 Includes pears and quinces.

Bureau of Agricultural Economics; official sources.

Table 178.—Apricots: Production and average price per ton received by producers, California, 1925-34

Item	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
Production short tons. Price dollars. Farm value, basis average price 1,000 dollars.	54, 00	63.00	208, 006 57. 00 11, 856	50.00	215, 000 63, 00 13, 545	39. 00	² 277, 000 29, 00 7, 917	17. 70	29. 70	53. 4 5

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

¹ Preliminary.

2 includes some fruit not harvested on account of market conditions (but not included in computing value), as follows: 1930, 8,300 tons; 1931, 4,000 tons; 1932, 13,000 tons.

Table 179.—Asparagus, commercial crop: Acreage, production, and season average price per crate and per ton received by producers, average 1928–32, annual 1933 and 1934

	P	roductio	n	Price for crop of-					
Utilization	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
For market.	Acres 56, 490	Acres 60, 630	Acres 65, 710	1,000 crates 1 4, 430	1,000 crates 1 4,729	1,000 crates 1 5, 406	Dollars 2.15	Dollars 1. 26	Dollars 1. 26
For manufacture	41, 150	55, 470	47, 120	Short tons 59,360	Short tons 67,700	Short tons 56, 500	74.44	56, 00	63, 38

¹ Crates containing approximately 24 pounds.

Table 180 .- Artichokes, commercial crop: Acreage, production, and season average price per box received by producers, average 1928-32, annual 1933 and 1934

	Acreage			P	roductio	n	Price for crop of—		
State	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
California	-1cres 7, 770	Acres 6, 350	Acres 8, 350	1,000 boxes 1 873	1,000 boxes 1 743	1,000 boxes 1 1,060	Dollars 1. 93	Dollars 1. 24	Dollars 1.00

¹ Boxes containing approximately 40 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 181 .- Avocados: Production and average price per ton or per box received by producers, California and Florida, 1924-34

	(Californi	1		(Californi	ì.	Florida			
Year	Pro- duc- tion	Price per ton	Farm value, basis average price	Year	Pro- duc- tion	Price per ton	Farm value, basis average price	Pro- duc- tion	Price per box 1	Farm value, basis average price	
1924 1925 1926 1927 1928	Short tons 129 233 625 319 1, 125	Dollars 720 540 400 680 330	1,000 dollars 93 126 250 217 371	1929 1930 1931 1932 1933 1934 ⁹	Short tons 396 2, 110 2, 525 1, 647 2, 450 9, 360	Dollars 658 260 166 171 168 60	1,000 dollars 261 549 419 282 412 562	Boxes 1 21,000 31,000 41,000 70,000 100,000	Dollars 2, 85 3, 85 2, 90 1, 75 1, 95 1, 50	1,000 dollars 60 119 119 122 214 150	

Boxes of 40 pounds.
 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Table 182.—Beans, lima, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934

		Acreage		P	roductio	n	Price for crop of—		
Utilization	Aver- age 1928-32 1933 1934			A.ver- age 1928-32	1933	1934	Aver- age 1928–32	1933	1934
For market	Acres 9, 230	Acres 11,850	Acres 12, 350	1,000 bushels 1 601	1,000 bushels 1 568	1,000 bushels ¹ 580	Dollars 1.84	Dollars 1, 02	Dollars 1.12
For manufacture	³ 25, 550	16, 430	24, 350	Short tons 2 3 12, 620	Short tons 2 8, 860	Short tons ² 16, 710	3 76. 21	56, 66	59. 49

Bushels containing approximately 32 pounds, unshelled.
 Reported on shelled basis.
 Short-time average.

Table 183.—Beans, snap, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-33, annual 1933 and 1934

	Acreage			F	roductio	n	Price for crop of-		
Utilization	Aver- age 1928-32				1933	1934	Aver- age 1928-32	1933	1934
For market	Acres 107, 230	Acres 123, 000	Acres 147, 100	1,000 bushels ¹ ² 9, 447	1,000 bushels ¹ 2 10, 832	1,000 bushels ¹ ² 13, 486	Dollars 1.41	Dollars 0.91	Dollars 0.83
For manufacture	54, 710	54, 710 40, 770 44, 850			Short Short Short tons tons tons 73,100 60,200 67,400			38. 59	41. 19

TABLE 184.—Beans, snap: Car-lot shipments, by State of origin, 1923-34

~	Calendar year ¹											
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York New Jersey Maryland Virginia North Carolina South Carolina Georgia Florida Tennessee Mississippi Arkansas Louisiana Texas Colorado California Other States	Cars 33 15 49 101 261 585 26 1, 644 81 47 2 107 88	Cars 81 100 136 899 559 517 68 1,157 248 85 7 439 210	Cars 62 48 127 570 459 334 27 1, 992 88 13 683 407 5 118 118	Cars 39 56 197 841 550 449 52 946 174 130 18 588 414	Cars 31 203 235 877 504 425 96 2,583 45 143 18 662 471 5 60 123	Cars 49 110 246 657 690 439 48 2,700 119 192 69 822 294 3 116 116	Cars 69 61 1,025 736 779 152 3,254 132 312 92 1,156 356 58 77 77	Cars 30 114 352 541 998 682 230 4,118 233 310 130 744 654 165 119	Curs 98 129 479 598 711 721 175 4, 319 83 208 36 857 76 92 159	Care 66 58 238 663 626 563 139 6, 941 28 525 10 73 136 6	Curs 15 137 178 335 474 263 48 7, 868 16 45 3 360 42 173 889 42 173 889	Cars 222 183 217 540 502 473 132 9, 328 47 418 2 769 163 6 156
Total	3, 124	4, 692	5, 133	4, 707	6, 481	6, 686	8, 626	9, 559	9, 348	10, 795	10, 529	13,053

I Crop-movement season is for calendar year, except Florida which begins in October of the preceding year.
² Preliminary.

Bureau of Agricultural Economics: estimates based on returns from crop reporters and capping establishments.

¹ Bushels containing approximately 30 pounds. ² Includes some quantities not harvested on account of market conditions: 437,000 bushels in 1930; 150,000 in 1931; 695, 000 in 1932; 263,000 in 1933, and 976,000 bushels in 1934. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. Beginning 1931 figures include lima beans in pod.

Table 185.—Beets, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price for crop of—		
Utilization	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934
For market	Acres 9, 560	Acres 10, 400	Acres 12, 220	1,000 bushels 1 2 1, 770 Short	1,000 bushels 1 1,657	1,000 bushels 1 2, 254 Short	Dollars 0. 58	Dollars 0. 48	Dollars 0. 43
For canning	³ 6, 340	4, 040	5, 690	tons 3 35,900	tons 24, 800	tons 33,800	³ 13. 26	9. 72	10. 53

Table 186.—Cabbage, commercial crop: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and FOR MARKET AND SATIERKRATIT

		Acreage	1	1	Production	n	Pric	e for crop	of—
Group and State	Aver- age 1928–32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Fall: South Carolina Virginia, Norfolk	-1 <i>cres</i> 640 170	Acres 1, 100 200	Acres 900 100	Short tons 5, 200 700	Short tons 4,400 1,000	Short tons 7, 200 400	Dollars 41. 82 45. 12	Dollars 10. 00 15. 00	Dollars 30. 00 33. 50
Total	810	1,300	1,000	5, 900	5, 400	7, 600	42. 20	11. 11	30. 13
Early: 1 California Florida Louisiana Texas	5, 020 3, 060 24, 400	4, 400 6, 200 2, 200 18, 100	5, 250 10, 700 4, 000 38, 600	² 26, 000 ² 30, 100 12, 700 ² 140, 100	30, 800 ² 43,400 8, 400 67, 000	² 31, 500 ² 64, 200 ² 18, 000 ² 212, 300	23. 40 37. 62 24. 82 22. 12	19. 20 16. 00 21. 60 8. 30	13. 10 16. 00 10. 60 7. 00
Total	36, 910	30, 900	58, 550	² 208, 900	2149,600	3 326, 000	24, 61	13.40	9. 65
Second early: Alabama. Georgia. Mississippi North Carolina South Carolina Virginia. Eastern Shore Norfolk.	400 3, 030 770 2, 860 4, 580 1, 470 3, 110	1, 800 1, 000 3, 500 850 1, 800 4, 850 2, 000 2, 850	3, 000 800 5, 800 1, 300 1, 200 3, 300 1, 500 1, 800	10, 400 2, 300 15, 000 3, 900 2 26, 000 2 21, 200 2 8, 200 2 13, 000	7, 200 4, 000 13, 300 3, 400 18, 900 17, 800 9, 000 8, 800	2 20, 400 3, 200 2 32, 500 5, 200 5, 400 2 15, 600 2 7, 500 2 8, 100	38. 02 30. 52 33. 46 32. 40 34. 48 29. 32 26. 28 31. 40	25.00 24.00 32.50 26.00 24.00 24.80 26.00 23.50	5. 00 10. 00 6, 10 10. 00 16. 00 11. 40 12. 50 10. 00
Total	13, 440	13, 800	15, 400	² 78, 800	64, 600	² 82, 300	33. 49	26. 18	7. 92
Intermediate: Arkansas. Illinois. Ilowa. Kentucky Maryland Missouri. New Jersey. New Mexico. New York, Long Island.	2, 040 1, 650 190 2, 160 950 4, 340 420	320 2, 200 1, 900 210 2, 330 1, 000 5, 500 250	250 2, 400 2, 000 220 1, 920 900 6, 200 400 2, 600	1, 600 16, 800 11, 300 1, 200 11, 200 5, 700 23, 100 3, 100 28, 300	1, 100 10, 800 8, 900 1, 000 10, 700 4, 500 30, 800 1, 400	500 9, 800 6, 000 1, 200 9, 600 2, 700 32, 900 2, 000	21. 00 14. 10 14. 08 26. 80 25. 36 18. 86 23. 00 18. 80	35. 00 26. 60 17. 50 30. 00 24. 50 36. 00 20. 00 25. 00	20. 00 14. 50 17. 70 22. 00 12. 50 26. 00 13. 00 18. 00
Ohio, southeast Tennessee	800	600 1, 500	700 1.890	² 6, 200 13, 600	2, 700	26, 000 3, 500 12, 700	20. 34 20. 96 22. 50	22.00 40.00 31.30	20. 00 24. 00 13. 20

See footnotes at end of table.

Bushels containing approximately 52 pounds.
 Includes 450,000 bushels in 1931 not harvested on account of market conditions. Price refers to harvested portion of crop.

3 Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Table 186.—Cabbage, commercial crop: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and 1934—Continued

FOR MARKET AND SAUERKRAUT-Continued

<u> </u>	· OK M	Z. IV.E. IV.	AND	DAULKE	KAU I~	-Continue	u .		
		Acreage		1	Production	n	Price	e for crop	of—
Group and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Intermediate—Contd. Virginia, southwest Washington		Acres 2, 500 1, 800	Acres 2, 800 2, 000	Short tons 14, 300 16, 900	Short tons 10, 000 12, 600	Short tons 11, 200 16, 000	Dollars 18, 02 13, 88	Dollars 21, 30 11, 90	Dollars 13, 30 11, 00
Total 3	22, 820	22, 760	24, 280	² 153, 300	127, 400	134, 100	18. 91	22, 38	15. 18
Late (domestic): Colorado Indiana Michigan Minnesota New York Ohio Orogon Pennsylvania Utah Wisconsin	2, 580 3, 230 1, 100 10, 140 2, 860 1, 590 1, 130 430 10, 520	1,500 2,800 2,800 1,000 8,000 2,260 2,000 1,050 400 7,200	1, 700 3, 400 3, 600 1, 000 9, 700 3, 000 1, 700 1, 000 450 13, 000	2 15, 800 18, 900 23, 800 8, 200 2 90, 100 23, 200 12, 100 9, 600 5, 800 81, 000	16, 500 12, 900 16, 500 6, 200 52, 000 8, 400 14, 000 7, 200 4, 000 43, 900	13, 800 20, 400 28, 800 6, 200 97, 000 26, 400 14, 400 8, 000 5, 500 101, 400	13. 30 9. 56 7. 46 9. 14 10. 12 6. 98 16. 68 15. 22 10. 78 8. 18	18. 90 13. 80 18. 40 15. 60 13. 80 10. 00 13. 40 19. 30 12. 20 13. 80	20. 80 7. 60 6. 50 11. 50 6. 30 12. 70 12. 70 9. 80 7. 70
Total 3	35, 130	29, 010	38, 550	2 288, 500	181, 600	321,900	9. 54	14. 78	7.86
Late (Danish): 4 Colorado Indiana Michigan Minnesota New York Ohio Pennsylvania Wisconsin	1, 940 20, 460 430	1, 960 400 700 1, 760 16, 800 480 500 5, 000	2,000 400 900 1,500 21,350 600 600 10,000	24, 400 5 2, 100 4, 000 11, 800 2 163, 700 2, 900 4, 800 61, 700	22, 700 2, 000 3, 800 8, 800 122, 600 2, 800 3, 900 32, 500	17, 000 2, 800 7, 600 10, 500 209, 200 4, 500 4, 800 85, 000	11. 80 5 13. 60 13. 50 13. 34 12. 40 13. 86 14. 78 11. 36	15. 00 21. 00 23. 00 17. 50 16. 90 18. 00 16. 00 17. 00	17. 50 9. 00 7. 00 9. 00 4. 00 8. 50 9. 00 7. 00
Total 3	34, 630	27, 600	37, 350	2 275, 000	199, 100	341, 400	11.99	16. 87	5. 81.
Grand total 8	143, 740	125, 370	175, 130	² 1,010,400	727, 700	1, 213, 300	16. 16	17. 42	8. 64
	·	F	OR SAU	ERKRA	UT 6				
New York Ohio Indiana Illinois Michigan Wisconsin Minnesota Colorado Washington Other States 7	2, 510 1, 500 630 1, 530 5, 200 410 390	6, 900 1, 800 1, 600 700 3, 000 150 200 200 1, 290	7, 200 2, 580 2, 600 860 1, 280 6, 600 350 420 300 1, 870	55, 700 20, 000 10, 300 4, 600 11, 500 42, 200 3, 400 4, 400 2, 300 11, 300	45, 500 6, 100 6, 400 2, 700 3, 900 18, 900 2, 200 1, 800 7, 100	73, 400 23, 500 14, 800 4, 000 11, 000 50, 800 2, 500 2, 700 2, 100 12, 600	7. 70 6. 20 6. 80 10. 40 7. 60 6. 60 7. 90 11. 20 9. 56	13. 40 7. 10 7. 90 16. 10 6. 80 9. 50 6. 20 12. 00 9. 01	5. 90 5. 60 6. 60 10. 00 5. 70 6. 30 0. 40 15. 80 9. 60 6. 98
Total	20, 240	16, 440	24, 060	165, 700	95, 400	197, 400	7. 53	11. 21	6. 35

¹ Season begins in fall of previous year.

³ Includes some quantities not harvested on account of market conditions; California, 7,500 tons in 1931, and 6,500 in 1934; Florida, 7,100 tons in 1931, 6,500 in 1933, and 21,400 in 1934; Louisiana, 2,000 tons in 1934; Texas, 37,500 tons in 1931, and 70,500 in 1934; Alabama, 4,200 tons in 1934; Missisippi, 4,700 tons in 1934; South Carolina, 10,200 tons in 1931; Viginia, Eastern Shore, 1,400 tons and Norfolk section, 5,000 tons in 1931, Eastern Shore, 1,500 tons and Norfolk section, 3,500 tons in 1934; Ohio (southeast), 2,200 tons in 1931; Colorado, 4,000 tons of domestic and 8,300 of Danish in 1932; New York, domestic, 12,000 tons in 1932. Price refers to harvested portion of crop. Cotoraco, 4,000 tons of comessic and 6,000 of Danish in 1832, 1969 1.

**Fefers to harvested portion of crop.

**Includes quantities used by sauerkraut manufacturers.

**Average price for late Danish crop is computed only to Dec. 1.

Short-time average.
 All these figures are included in upper portion of this table but are segregated here for convenient refer-

ence.
7 Other States includes Iowa, Maryland, New Jersey, North Carolina, Oregon, Pennsylvania, Tennessee,
Texas, Utah, and Virginia.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and sauerkraut manufacturers.

Table 187.—Cabbage: Car-lot shipments, by State of origin, 1923-33

				C	rop-mo	vement	season	1			
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933 2
New York Pennsylvania Ohio Illinois Michigan Wisconsin Minnesota Iowa Maryland Virginia North Carolina South Carolina Georgia Florida Tennessee Alabama Alississippi Louisiana Texas Colorado Washington Oregon California Other States	317 538 289 732 6, 415 989 390 220 3, 326 4, 299 108 1, 172 270 1, 564 1, 134 456 1, 336 3, 174 159	Cars 11, 816 409 658 279 658 279 541 552 275 1, 552 275 1, 550 3, 842 908 6005 103 7, 281 1, 473 86 364 401	Cars 12, 545 552 414 198 573 5, 409 873 2655 238 2, 2255 3, 421 91 1, 936 3, 17 1, 270 674 4, 048 1, 432 103 170 650 620	Care 12, 898 523 544 195 287 5, 177 1, 125 459 166 1, 814 2, 671 662 1, 586 990 1, 586 991 331 6, 093 1, 274 47 663 698	Cars 14, 080 4,080 765 193 375 4, 547 1, 090 435 293 2, 720 1, 900 58 1, 051 667 1, 803 710 592 5, 546 683 139 47 360 646	Cars 8, 636 252 581 329 428 6, 412 1, 493 566 266 2, 445 1, 168 8, 21 1, 168 8, 21 1, 249 592 7, 242 1, 165 82 65 798 801	Cars 10, 609 302 555 296 5, 395 1, 200 442 428 3, 969 261 1, 256 8, 549 7, 905 810 168 43 5112 827	Cars 11, 917 216 66 355 153 5, 959 683 504 67 1, 772 214 2, 731 952 676 931 265 5, 347 1, 164 85 27 837 1, 007	Cars 12, 014 194 484 188 137 3, 156 493 184 75 1, 821 189 1, 864 63, 281 0, 166 8, 916 602 78 243 627	Cars 9, 778 88 126 390 3299 3, 292 778 425 70 1, 050 58 934 68 1, 521 316 817 718 485 5, 225 464 49	Cars 5, 614 173 1005 2, 272 692 169 163 1, 535 1, 701 201 2, 873 506 2, 997 497 191 300 599 415
Total	37, 488	42, 081	39, 024	40, 378	39, 331	38, 727	44, 131	38, 204	37, 900	29, 142	22, 921

¹ Crop-movement season covers 17 months, from December through the second following April; i. e., the 1923 season begins December 1922 and ends April 1924. Figures for certain States include shipments for month preceding or following the regular crop-movement season.

² Preliminary.

Table 188.—Cantaloups: 1 Car-lot shipments, by State of origin, 1923-34

					Cre	op-move	ement s	eason 2				
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 3
		1027	1020	1320	1521	1020	1020	1930	1991	1902	1899	1934 3
T 31	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars
Indiana Michigan	681 306	822 114	1, 089 146	629 84	415 77	465 52	389	184 13	278 16	239	136 29	278
Delaware	818	511	657	551	427	427	285	193	233	190	172	194
Maryland	1, 270	699	1, 118	1, 283	1, 159	1,002	561	274	347	264	116	120
North Carolina South Carolina	620 70	401 116	655	401 173	606 179	304	88 44	19	110	180	178	200
Georgia	217	586	117	136	108	104	76	125 138	89 83	224 83	319 120	119 88
Arkansas	337	1,052	1, 245	1, 127	788	854	413	245	443	541	119	163
Texas	387	456	498	514	242	244	176	358	758	583	399	373
Colorado New Mexico	2,306 364	3, 229 518	3, 837 574	5, 108 640	3,980 415	2,789 370	4, 664 352	4,088	2,790	2, 555	2, 520	922
Arizona	1, 208	2, 145	3, 833	3, 712	5, 217	5,901	5, 457	5, 834	612 4,542	560 3, 109	234 1,922	198 2,469
Washington	207	298	221	145	252	258	382	282	150	105	36	46
California	16, 486	19, 930	18, 707	18, 320	22, 406		26, 850	23, 626	25, 707	17, 269	12,602	13, 827
Other States	646	617	1, 091	601	486	523	289	384	424	407	252	277
Total	25, 923	31, 494	33, 819	33, 424	36, 757	38, 694	40, 042	36, 179	36, 582	26, 322	19, 154	19, 278

¹ Includes Honey Ball, Honey Dew, Casaba, and Persian melons. Melons other than cantaloups were not reported separately until 1923. Shipments are as follows: 1923, 1,152 cars; 1924, 2,565 cars; 1925, 3,654 cars; 1926, 6,484 cars; 1927, 6,516 cars; 1928, 9,719 cars; 1929, 11,894 cars; 1930, 12,352 cars; 1931, 12,207 cars; 1932, 9,107 cars; 1933, 6,005 cars; and 1934, 6,976 cars.

2 Crop-movement season extends from April through November of a given year-include shipments in December, following the regular crop-movement season.

3 Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 189.—Cantaloups, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price	for crop	of—
Group and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934
Early: California, Imperial Florida Texas	510 570	Acres 35, 540 400	Acres 27, 900 300	1,000 crates ² ³ 6, 588 26 55	1,000 crates 2 3 4, 052 24	1,000 crates ² 4,464 18	Dollars 1. 37 1. 65 1. 65	Dollars 1, 16 1, 00	Dollars 1. 41 1. 30
Total	45, 100	35, 940	28, 200	³ 6, 669	3 4, 076	4, 482	1. 37	1, 16	1.41
Second early: Arizona Arkansas California, other Georgia Novada North Carolina Oklahoma South Carolina Texas, other Total	780	8, 100 2, 500 10, 000 1, 200 1, 200 2, 800 600 2, 500 2, 900	5, 700 2, 550 9, 750 2, 400 150 3, 600 650 1, 800 4, 800	3 1,863 231 3 2,726 62 24 133 40 99 3 329 3 5,507	3 1, 134 112 1, 540 102 9 224 45 3 225 218	855 120 1,736 120 14 216 29 90 264 3,444	. 95 . 89 . 90 1. 15 1. 04 . 93 . 89 1. 00 . 76	. 40 .75 .75 .80 .75 .80 .70 .45 .75	1. 30 . 90 . 87 1. 00 1. 35 . 55 . 80 . 60 1. 00
	20,070	30, 700	01, 400	- 0, 001	2,000				
Intermediate: Delaware Delaware Illinois Indiana Maryland New Mexico Tennessee Washington Total	7, 100	3, 000 1, 200 5, 300 7, 700 2, 000 240 1, 650 21, 090	3, 090 1, 100 5, 800 7, 400 1, 300 2, 000 20, 990	256 86 428 631 255 18 218 3 1,892	360 108 450 847 220 18 223 3 2, 226	433 77 609 962 143 21 250 2,495	1. 01 1. 29 1. 27 1. 16 1. 11 1. 28 . 78	.75 .40 .65 .50 .75 .45	. 90 . 50 . 85 . 90 1. 40 . 90 . 85
Late: Colorado. Iowa. Kansas. Michigan. Nevada. New Jersey. Ohio. Oregon. Utah. Total	9, 090 680 450 3, 680 270 3, 520 4 460 4 680 4 480	8, 820 1, 100 4, 600 4, 600 4, 750 700 600 250 21, 320	3, 050 700 200 4, 830 40 5, 000 800 600 350	1,588 60 51 387 33 438 49 4100 448 2,695	1, 499 88 47 506 4 499 63 108 34 2, 848	336 47 12 435 3 340 80 84 57	. 90 1. 10 . 85 1. 32 1. 24 1. 02 4. 37 4. 90 4. 48	. 55 . 60 . 55 . 85 . 95 . 90 1. 10 . 55 . 55	. 90 1, 20 . 80 1, 15 . 87 1, 20 1, 30 1, 00 . 95
Grand total							1, 13	. 80	1, 13

Table 190.—Carrots, commercial crop for market: Acreage, production, and season average price per bushel received by producers, average 1928-32 annual 1933 and 1934

		Acreage		l F	roductio	n	Price	of—	
Marketing season	A ver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934
Fall Early Second early Intermediate Late 4	Acres 3, 280 8, 470 8, 550 1, 880 5, 400	Acres 5,030 11,300 8,770 1,650 5,840	Acres 5, 800 10, 770 11, 030 1, 950 6, 330	1,000 bushels 2 1,831 3 1,840 3 3,432 3 488 3 2,536	1,000 bushels ² 2, 485 1, 573 3, 637 458 2, 482	1,000 bushels 2 2, 842 1, 363 5, 223 668 2, 909	Dollars 0. 69 . 44 . 64 . 83 . 53	Dollars 0. 54 . 18 . 58 . 72 . 39	Dollars 0, 59 . 22 . 54 . 50 . 44
Total	27, 580	32, 590	35, 880	3 10,127	10, 635	13,005	. 59	. 47	. 50

¹ Including undetermined quantities used for canning in some States.

¹ Includes Honey Ball, Honey Dew, Casaba, and Persian melons not separately reported.
2 Standard crates (45's) containing approximately 60 pounds.
3 Includes some quantities not harvested on account of market conditions: Arizona, 360,000 crates in 1932 and 414,000 in 1933; California, Imperial, 1,603,000 crates in 1932 and 357,000 in 1933 and other, 758,000 crates in 1932; Texas, other, 433,000 crates in 1931 and 182,000 in 1932; New Mexico, 109,000 crates in 1932 and 55,000 in 1933; South Carolina, 37,000 crates in 1933. Price refers to harvested portion of crop.
4 Short-time average.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Bushels containing approximately 50 pounds.

Bushels containing approximately 50 pounds.

Includes some quantities not harvested on account of market conditions: 300,000 bushels in 1929; 44,000 in 1930; 1,634,000 in 1931; and 375,000 in 1932. Price refers to harvested portion of crop.

A verage price for late States is computed only to Dec. 1.

Bureau of Agricultural Economics: estimates based on returns from crop reporters.

Table 191.—Carrots: Car-lot shipments, by State of origin, 1923-33

				Or	op-mov	ement s	eason 1				
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933 2
New York Illinois Michigan Minnesota Virginia Mississippi Louisiana Texas Colorado Arizona Washington California Other States	Cars 1, 410 24 35 8 2 142 58 65 12 21 24 178	Curs 2, 262 3 55 5 1 266 32 282 26 11 157 214	Curs 1, 825 23 54 59 40 197 106 575 29 8 278 233 3, 427	Cars 1,845 2 77 84 10 209 70 1,136 62 11 30 557 211 4,304	Curs 2, 430 13 91 80 44 496 177 903 11 10 2, 363 225 6, 853	Cars 1, 484 96 208 59 137 230 99 1, 685 216 9 96 2, 938 198	Cars 2, 111 33 204 123 110 108 71 2, 860 96 108 23 6, 095 207	Cars 2, 188 37 141 62 67 28 84 2, 145 43 157 14 7, 206 220 12, 392	Cars 1, 882 38 319 18 47 12 41 1, 181 42 254 88 7, 403 187	Cars 1,537 14 92 32 6 7 17 1,492 310 42 6,317 96	Cars 1, 427 5 153 70 2 5 10 1, 110 49 306 60 6, 332 9, 571

¹ Crop-movement season covers 21 months, beginning in October of the previous year in such early ship-· Crop-movement season covers 21 months, beginning in October of the previous year in such early shipping States as California, Louisiana, and Texas, and extending through June of the following year, i. e., the 1923 season begins in October 1922, and ends in June 1924, in order to include shipments from storage in Northern States and to have season comparable with acreage and production.

2 Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included

Table 192.—Cauliflower, commercial crop: Acreage, production, and season average price per crate received by producers, average 1928-32, annual 1933 and 1934

		Acreage		P	roductio	n	Price	for crop	of
Marketing season	Aver- age 1928-32	1933	1984	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Fall and winter Early Late	Acres 7, 990 8, 630 10, 830	Acres 11,000 7,250 11,900	Acres 11, 130 6, 540 10, 880	1,000 Crates 1 2, 261 2, 235 2, 162	1,000 Crates 1 2 2, 696 1, 870 2, 434	1,000 Crates 1 2, 570 1, 455 2, 596	Dollars 0. 74 . 80 . 90	Dollars 0. 57 . 52 . 72	Dollars 0.48 .58 .72
Total	27, 450	30, 150	28, 550	2 6, 658	2 7, 000	6, 621	. 81	. 61	. 60

¹ Crates containing approximately 39 pounds (11/2 bushels).

Table 193.—Celery, commercial crop: Acreage, production, and season average price per crate received by producers, average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price for crop of—				
Marketing season	A ver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934		
Fall and winter	Acres 7, 180 7, 620 1, 000 3, 710 11, 650 1, 460	Acres 3,500 8,830 1,500 3,780 12,100 1,540	Acres 5,800 7,850 1,200 3,920 11,940 1,490	1,000 Crates 1 1, 240 2, 716 2 590 1, 014 2 3, 348 443	1,000 Crates 1 693 2 2,621 644 902 3,345 419	1,000 Crates 1 1,114 2,501 335 951 3,220 496	Dollars 1. 18 2. 18 1. 66 1. 62 1. 27 1. 35	Dollars 1. 19 1. 15 1. 98 1. 07 1. 28 1. 32	Dollars 1, 10 1, 46 1, 93 1, 32 2, 95 1, 25		

Includes some quantities not harvested on account of market conditions: 176,000 crates in 1932 and 160,000 in 1933. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

¹ Two-thirds size (New York) crates, containing approximately 90 pounds.

² Includes some quantities not harvested on account of market conditions: 249,000 crates in 1932, and 197,000 in 1933. Price refers to harvested portion of crop.

³ Average price for late States computed only to Dec. 1.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 194.—Celeru: Car-lot shipments, by State of origin, 1923-33

01-1-	Crop-movement season ¹												
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933 2		
New York New Jersey Pennsylvania Michigan Florida Idaho Colorado Oregon California Other States Total	Cars 3,742 219 223 1,486 6,398 49 125 205 4,419 82	Cars 4, 529 177 225 1, 332 7, 219 48 197 363 4, 748 99	Cars 4, 492 149 208 2, 224 7, 952 29 399 398 4, 554 109	Cars 4, 898 138 194 1, 880 5, 504 19 211 511 6, 226 80	Cars 5, 893 106 169 1, 997 7, 499 46 161 625 7, 696 125	Cars 4, 192 32 31 71 2, 139 8, 413 121 188 605 8, 384 135 24, 280	Cars 3, 847 53 105 1, 852 8, 831 262 149 673 9, 580 138 25, 490	Cars 5, 451 32 81 1, 606 9, 838 287 136 647 8, 480 69 26, 627	Cars 3,875 25 61 1,304 8,245 97 53 622 8,358 100 22,740	Cars 4, 688 32 36 861 7, 931 99 80 412 7, 834 82 22, 055	Cars 2, 529 26 15 877 6, 987 639 421 5, 922 93		

¹ Crop-movement season covers 20 months, from September through the second following April; i. e., the 1923 season begins September 1922, and ends April 1924.

² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

TABLE 195.—Cherries: Production in 12 States 1 and average price per ton received by producers, average 1927-31, and annual 1933 and 1934

	P	roductio	n		e for		P	roductio	n		e for
State	Aver- age, 1927-31	1933	1934 2	1933	1934 2	State	Aver- age, 1927-31	1933	1934 2	1933	19342
New York Sweet Sour Pennsylvania Ohio Michigan Wisconsin Montana	Short tons \$15, 354 	Short tons 10, 754 1, 398 9, 356 4, 375 2, 806 27, 300 7, 040	1, 160 18, 060 6, 344 3, 660 26, 560 4, 400	55 55 55 55	lars 50	Colorado Utah Washington Oregon California	Short tons 2,740 3,450 3,500 11,170 10,368 317,460	1,976 3,078 16,330 15,000	5, 920 3, 850 13, 500 9, 620 16, 700	65 50 50 66	lars 65 45 55 75 75 89

¹ Estimates include only certain States where total production can be calculated from commercial sales (shipments, canning, cold pack, etc.) and differ from previously published commercial estimates for some States by an increased allowance for farm and local use.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, Estimates of production for 1929-33 revised on basis of 1930 census. Earlier years not so revised.

² Preliminary.

³ Includes some quantities not harvested on account of price as follows: New York, 1931, 2,550 tons; California, 1931, 3,000 tons, 1933, 500 tons. Prices and value are computed on the harvested crop.

⁴³⁻year average.

Table 196.—Citrus fruit production and average price per box received by producers, by States, 1899, 1909, and 1919-34 1

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ļ							()ran	iges	*									
			Tota	al pro	ductio	n							Pri	ce pe	r bo	3			
Year	California	Florida 4	Texas	Arizona	Alabama 6	Louisiana	Mississippi	7 States	.	California	Florida	Texas		Arizona	Alabama	Lonisiana		Mississippi	7 States
	1,000 boxes	1,000 boxes	1,000	1,000 boxes	1,000	1,000 boxes	1,000 boxes	1,0 box	00 es	Dol- lars	Doi lars	- Do		Dol- lars	Dol- lars	la	ol- rs	Dol lars	Dol- lars
1899 6 1909 6 1919	5, 882 14, 440	273 4,888 7,533		11 33 80	(7) 1	1 152 37	5 31	6, 19, 23,	167	2. 75	4.0	5	- -		 				
1920	15, 528 22, 547 13, 921	9, 457 8, 871		60 80	20 82 82 190	42 50 60 75	25 30 45	32, 23,	213 034	2. 18 2. 80	2. 4 3. 6	5	-						
1922	21, 286 24, 324 18, 535	10, 897	8 (8	81 86	2251	60 75	55	38,	563 033	2.00 2.00	1.8	0	- -						
1924 1925	24, 200	10, 344	12	60 86	225 2 130 75	75 100	27	34,	323 897	3. 55 2. 84	3.0	3 2. 5	50	3. 50 3. 00	4.00 3.00	2.	20 70 60	3. 0	
1926 1927	28, 167 22, 737	9, 93	2 41 3 70	75 54	1 110	200	50	33.	062 154	3. 05 4. 00	3. 6	0 1.9	100	3. 10 4. 00	3.00 4.00 3.00	4.	00	3.0 4.0 3.0	3.88
1928 1929	38, 994 21, 483	10, 30	261	137	85 212	220 187	37	32,	659 621	2. 05 3. 90 1. 50	2. 9	2 2.	loı	3. 30 3. 80 1. 50	2. 50	3.	35 05	2. 5 2. 0	5 3. 56
1930 1931	35, 470 34, 900	14, 220	520	145	80 100	245	54	50,	270 164	1. 10	1. 9	0 1. (05	1. 25	1.78	1.	. 75	1.7 1.6	5 1.33
1932 1933 1934 [©]	34, 265 828, 439 41, 565	18, 100	390	143	3	212	2	8 47.	368 289 351	1. 00 1. 66 1. 80	1. 5	1 1.	100	1. 40 1. 50	1.88	1.	00	1.8	5 1. 59
1004	1 41,000	10,000	31 000	1.0	===	pefrui							T	Len	nons	i		Lin	
Year		Total ;	produ	ction			1	Price	per	box	3		1	Pro- luc- tion	Pri pe box	r	di	ro- ue- on	Price per box 3
204	Florida 4	California	Texas	Arizona	4 States	Florida	Colifornia	Camound	Texas		Arizons	4 States		California	California		:	Florida	Florida

^{1, 062} 5, 898 6, 142 6, 644 7, 766 8, 936 8, 760 8, 316 8, 693 8, 158 11, 314 2, 756 3, 499 4, 955 4, 050 6, 732 5, 125 7, 316 7, 712 6, 000 7, 900 5, 900 3. 45 3. 10 2. 75 2. 90 3. 00 3. 00 2.00 2.92 3.45 3.30 1.60 3.211 2.81 2.81 2.80 2.70 2.35 2.35 2.35 34 35 60 95 105 150 55 7, 039 60 8, 255 95 9, 459 105 9, 463 150 9, 266 120 9, 846 176 9, 578 211 13, 250 35 40 36 30 12 0 6 8 2.00 2.50 2.50 1.90 1.60 2.15 3. 50 3. 00 2. 50 3. 80 3. 50 2. 50 3. 55 2. 84 2. 35 3. 80 2. 50 1.72 2.75 1. 61 2. 75 1. 94 2. 88 1. 65 1925___ 600 200 2. 76 2. 00 2. 91 1. 74 1928 672 361 6. 50 1927 720 972 524 753 4. 50 1928... 211 13, 250 365 11, 109 400 18, 934 450 15, 147 614 15, 149 700 14, 243 1, 240 18, 248 7, 900 5, 900 7, 950 7, 800 6, 704 7, 295 7, 500 4. 50 5. 50 5. 00 4. 50 4. 00 8, 274 16, 109 10, 786 1,000 1,290 530 135 2. 44 1. 20 2. 42 1. 21 1929 2. 65 1. 25 1930 1. 15 1. 50 1, 431 1, 350 1, 713 1, 788 1.00 .85 1.10 1031 2 480 1.19 . 55 1. 10 .90 1.06 11, 800 1ŏ 1932 . 84 1. 12 81 1, 130 2, 720 . 90 2. 35 1933 10, 700 1. 17 3.00 1934 9...... 12, 500 1. 10 . 85 . 85 . 92 3. 50

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¹ Estimates of production include fruit consumed on farms, sold locally, and used for manufacturing purposes, as well as that shipped. Fruit ripened on the trees but destroyed by freezing or storms prior to picking is not included. The estimates cover the crop produced from the bloom of the year shown. In California, where picking continues throughout the year, the estimates are for 12-month periods beginning Nov. 1. In other States the season begins about Sept. 1. Nov. 1. In other State 2 Includes tangerines

Includes tangerines.
 Sesson average prices, 1919-33; season average price to Dec. 1, 1934. California prices are for naked fruit at the packing-house door; Florida prices are for packed boxes minus selling charges on the commercial crop so handled and bulk prices for other commercial and noncommercial marketings; Florida lime prices, 1919-23, are Dec. 1 prices.
 From prospects on Apr. 1, 1935, commercial shipments of Florida citrus fruits from the 1934 crop were estimated at 14,000,000 boxes of oranges and 7,500,000 boxes of grapefruit shipped from the 1933 crop. Commercial estimates and forecasts represent out-of-State shipment, whether by rail, boat, or auto truck.
 For years 1919-34, equivalent in standard boxes, each equal to about 2 of the "half straps" commonly used.

⁵ Census. Size of boxes not specified.
⁷ 500 boxes or less.
⁸ Includes 977,000 boxes of oranges for charity which are excluded in computing value.
⁹ As estimated from prospects on Apr. 1, 1935, except for lemons and limes which are based on Dec. 1 prospects.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised 1919-28. See introductory text.

Table 197.—Citrus fruit: Car-lot shipments, by State of origin, 1923-24 to 1933-34 ORANGES:

State				(Crop mo	ovemen	t season	2			
	1923-24	1924-25	1925-26	1926-27	1927–28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-343
California_Florida_Alabama_Mississippi Louisiana_Texas_Arizona_Georgia_	Cars 44, 905 33, 431 600 13 3 3	25, 091 2 	19, 625 338 8	Cars 53, 511 22, 536 179 4 1 9	Cars 43, 693 16, 453 312 15 251 26 33	Cars 68, 797 32, 550 97 5 264 33 66	485 25 278 156	Cars 64, 774 33, 915 2 1 155 119 90	Cars 61, 615 22, 769 175 40 84 200 66	Cars 56, 230 30, 017 227 48 85 102 106	Cars 53, 243 30, 232 1 45 64 126 3
Total	79, 049	59, 582	67, 091	76, 313	60, 783	101, 812	61,399	99,056	84, 949	86, 815	83, 714
			(RAPE	FRUI	r					
Florida Texas Calliornia Arizona Louisiana	19, 614 99 446 155	521 431	14, 269 298 558 218	17, 304 747 593 2 10	14, 166 1, 036 780 211	1,617	3,493 1,194	2,247 1,220 436	296		14, 929 1, 611 2, 194 909
Total	20, 314	21, 198	15, 343	18, 854	16, 193	24, 513	19,060	29, 986	24, 937	21, 449	19, 643
				LEM	ONS						
CaliforniaArizona	13, 388	1	1				2	1	2	2	î
Total	13, 391	11,683	<u> </u>	<u> </u>	<u> </u>	<u> </u>	13,566	18, 378	15, 712	14, 704	10, 9/5
		·	M	IXED	CITR	US .		1	,		
Florida California Texas Arizona Louisiana	3, 608 1, 424 1	4, 226 1, 148 18 10	1,605		1,590 92	1,783 185	1,343 501	1, 626 288 29	1,666 520 16	1,703 275 1	1,750 124 16
Total	5, 033	5, 402	5, 171	6, 984	7, 919	11, 102	10, 118	16, 785	11, 114	10, 480	9, 941

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

¹ Includes tangerines and satsumas.
² Crop movement season extends as follows: California, from Nov. 1 through October of the following year; all other States from Sept. 1 through August of the following year, except lemons from Nov. 1 through October of the following year
³ Preliminary
⁴ Reported in October 1924.

Table 198.—Gravefruit, Florida: Weighted average auction price per box Chicago and New York, by months, 1925-26 to 1934-35

¹ Where months are missing, average is for months shown. ² Includes an average in September 1933 of \$2.

Bureau of Agricultural Economics.

Compiled as follows: Chicago, Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

Table 199.—Grapefruit: Fresh fruit produced and quantity canned in Florida, and receipts of canned grapefruit from Puerto Rico, 1921-22 to 1933-34

Q	Florida	pack, cann	ed fruit	Total Flor- ida pro-	United States receipts of canned fruit from Puerto Rico ¹						
Season	Grapefruit hearts	Grapefruit juice	Total pack	duction	Grapefru	it hearts	Grapefi	uit juice			
1921-22 1922-23	Cases 2 10,000	Cases 2	Cases 2 10,000	Boxes 6, 644, 000	Pounds	Equivalent cases 2	Gallons	Equivalent cases 2			
1923-24 1924-25 1925-26 1926-27	150,000 200,000 350,000 400,000 700,000		150, 000 200, 000 350, 000 400, 000 700, 000	7, 766, 000 8, 936, 000 8, 760, 000 8, 316, 000 8, 693, 000	3, 861, 555 3, 840, 819 6, 348, 020 9, 262, 394	128, 718 128, 027 211, 601 308, 746					
1927-28 1928-29 1929-30 1930-31	600,000 957,000 1,316,738 2,712,489	205, 000 173, 934 412, 066	600, 000 1, 162, 000 1, 490, 672 3, 124, 555	8, 158, 000 11, 314, 000 8, 274, 000 16, 109, 000	10, 733, 709 2, 832, 310 12, 415, 247 5, 931, 578	357, 790 94, 410 413, 842	12 274				
1931–32 1932–33 1933–34	907, 323 2, 161, 975 2, 184, 577	247, 652 725, 967 610, 115	1, 154, 975 2, 887, 942 2, 794, 692	10, 786, 000 11, 800, 000 10, 700, 000	4, 483, 485 1, 289, 574 4, 410, 944	197, 719 149, 450 42, 986 147, 031	15, 574 3, 948 9, 194 15, 055	4, 615 1, 170 2, 724 4, 461			

Year beginning July; reports of Bureau of Foreign and Domestic Commerce.
 Cases on basis of 24 No. 2 cans.

Bureau of Agricultural Economics.

Figures on the Florida pack of canned grapefruit were obtained as follows: 1921–22 to 1927–28, averages of various trade estimates; 1928–29, estimated by the Florida Grapefruit Canners Association; 1929–30 to 1933–34, complete surveys made by the Bureau of Foreign and Domestic Commerce. A box of fresh fruit in Florida is estimated to pack slightly more than a case of canned fruit.

Some grapefruit also is canned in Texas, Arizons, and California. In 1932–33 Arizona packed 700 cases of grapefruit hearts and 3,200 cases of juice. In 1933–34 the Arizona pack was 570 cases of hearts and 5,900 cases of juice, besides 68,000 gallons of juice in barrels, equivalent to 20,000 cases of 24 No. 2 cans.

Considerable quantities are exported from the United States; domestic exports for the fiscal year 1933–34 were 31,898,086 pounds or the equivalent of 1,063,270 cases. Puerto Rico also ships to foreign countries.

Table 200 .- Lemons, California: Weighted average auction price per box. Chicago and New York, by months, 1925-26 to 1934-35

Market and year	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Average
Chicago: 1930-31 1931-32 1932-33 1933-34 1934-35 New York: 1925-26 1926-27 1927-28 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	\$4. 52 3. 84 5. 31 4. 10 4. 45 4. 13 3. 82 6. 92 4. 90 8. 70 4. 18 5. 40 3. 95 4. 37	\$4. 44 4. 00 5. 06 4. 84 4. 03 4. 46 6. 13 5. 62 8. 63 4. 52 4. 04 5. 12 4. 24 3. 97	\$5.00 3.95 4.71 4.72 3.91 4.20 6.33 5.26 5.68 4.80 4.73	\$4.00 4.03 3.92 4.35 4.16 6.03 3.95 5.06 4.08 3.81 3.47 4.35	\$4. 29 3. 91 4. 30 4. 60 5. 40 5. 19 4. 07 4. 81 4. 41 7. 3. 80 3. 89 4. 60	\$3. 75 3. 33 4. 00 4. 03 	\$4.00 4.57 4.97 5.04 4.83 6.42 3.82 7.24 4.43 4.96 4.95 4.89	\$6. 83 4. 53 5. 79 5. 62 3. 79 6. 04 6. 89 6. 15 5. 447 5. 81	\$6. 37 5. 86 4. 24 5. 86 	\$6. 71 6. 58 4. 14 4. 72 4. 38 6. 37 6. 11 7. 82 7. 93 6. 50 4. 36 4. 82	\$7. 75 8. 45 4. 62 4. 09 3. 56 8. 82 5. 59 11. 87 5. 36 7. 28 8. 40 3. 84	\$6.03 8.74 4.78 4.85 4.85 9.27 5.19 11.22 4.23 5.66 8.48 4.86 4.35	\$5. 64 5. 11 4. 81 4. 99 4. 35 4. 64 6. 62 5. 82 5. 30 5. 09 4. 71

Bureau of Agricultural Economics.
Compiled as follows: Chicago, Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

Table 201.—Oranges, California, Valencia: Weighted average auction price per box, Chicago and New York, by months, 1925-34

Market and season	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average for season 1
Chicago: 1925 1926 1927 1928 1927 1929 1930 1931 1931 1932 1933 1934 New York: 1925 1926 1927 1928 1929 1929 1930 1931 1931	\$5. 83 2, 72 4, 80 4, 92 4, 66 5, 94 4, 09 6, 59 2, 85	\$4, 46 4, 42 7, 16 7, 40 3, 31 3, 29 3, 88 6, 28 4, 43 7, 38 4, 40 7, 97 3, 42 3, 43 3, 06 3, 75	\$4.37 4.90 6.40 4.08 7.04 3.57 3.57 3.40 7.43 4.498 7.22 4.58 7.19 3.86 4.73 3.86 4.73	\$4.97 5.48 7.36 3.86 3.96 3.35 3.10 3.97 6.40 5.21 5.90 7.36 4.31 3.62 3.24	\$4.480 5.90 7.15 4.457 7.15 2.96 8.99 6.489 6.15 7.33 8.05 7.33 8.05 7.33 8.05 7.33 8.05 7.33 8.05 8.	\$5.45 6.70 7.50 4.36 3.25 3.35 3.84 7.58 5.39 6.73 7.77 4.72 3.42 3.42 3.42 3.42	\$8.38 6.36 7.17 4.57 8.426 3.31 4.56 8.23 4.56 8.44 7.053 8.43 8.43 8.43 8.43 8.43 8.43 8.43 8.4	\$7. 91 6. 04 6. 50 3. 53 3. 53 2. 81 4. 40 9. 90 6. 71 6. 71 6. 72 7. 78 3. 77 2. 81 4. 40	\$3, 23 3, 19 2, 13 6, 69 5, 75 4, 85 2, 98 4, 07 1, 89	\$5.04 5.59 7.11 4.23 7.33 3.77 13.24 13.20 14.16 6.00 7.44 4.66 3.97 3.41 4.42

Where months are missing, average is for months shown.
 Includes an average in March 1932 of \$2.73.
 Includes an average in January 1934 of \$2.24.

Bureau of Agricultural Economics. Eureau of Agricultural Economics.

Compiled as follows: Chicago, October 1925–September 1927, from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927–Oct. 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

Table 202.—Oranges, California, Navel: Weighted average auction price per box, Chicago and New York. by months. 1925-26 to 1934-35

Market and season	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Average for season 1
Chicago: 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. New York: 1926-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1931-32. 1931-32. 1931-32.	\$5.87 6.29 5.33 3.14 2.80 3.26 8.00 6.32 6.28 5.72 5.72 5.23	\$4. 45 4. 68 5. 42 4. 74 5. 75 3. 49 2. 78 2. 26 5. 55 5. 55 4. 46 5. 55 3. 30 2. 78 2. 78 2. 68	\$4. 24 4. 63 4. 62 5. 08 8. 45 2. 71 2. 84 2. 84 4. 59 4. 56 4. 48 4. 98 3. 45 2. 71 2. 82	\$4. 76 4. 87 5. 41 3. 76 5. 19 3. 20 3. 39 2. 67 4. 55 4. 71 5. 18 3. 89 4. 99 3. 32 2. 73	\$4. 83 4. 55 5. 3. 36 6. 25 3. 48 8. 00 2. 55 2. 82 4. 70 4. 54 5. 52 5. 62 3. 42 3. 06 2. 52 5. 27 2. 72	\$5. 34 4. 63 6. 07 3. 93 6. 31 3. 31 3. 09 2. 481 5. 50 4. 89 5. 98 4. 06 6. 03 3. 32 3. 32 4. 06	\$3. 51 6. 82 4. 14 3. 37 2. 87 3. 41 4. 73 4. 43 7. 39 3. 56 6. 64 3. 93 3. 38 2. 83 3. 23	\$3. 07 3. 22 5. 56 5. 60 3. 56 3. 52 3. 02	\$4. 74 4. 66 5. 43 4. 09 5. 79 2. 3. 60 3. 13 2. 72 2. 98 4. 80 4. 74 5. 61 4. 10 5. 64 3. 14 2. 73 2. 88

¹ Where months are missing, average is for months shown. ² Includes an average in October 1930 of \$5.13.

Bureau of Agricultural Economics Bureau of Agricultural Economics.

Compiled as follows: Chicago, December 1925-September 1927, from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927-Oct. 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

Table 203.—Oranges, Florida: Weighted average auction price per box, Chicago and New York, by months, 1925-26 to 1934-35

Market and season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Average for sea-son 1 2
Chicago: 1925-26. 1926-27. 1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. New York: 1928-29. 1929-30. 1930-31. 1931-32. 1931-32. 1931-32.	\$7. 35 3. 89 4. 06 3. 45 4. 58 2. 62 1. 74 3. 04 7. 45 3. 70 5. 08 3. 42 4. 76 2. 64 2. 88 2. 47 3. 20	\$6.87 4.17 4.99 3.09 4.15 3.01 2.97 3.03 2.42 2.71 7.19 4.79 4.79 4.79 4.71 4.045 3.21 2.49 2.64	\$3. 30 2. 92 4. 89 3. 16 4. 18 2. 50 2. 74 2. 31 2. 30 4. 00 3. 53 5. 59 3. 55 4. 21 3. 01 3. 11 2. 76 2. 36 2. 42	\$3. 57 3. 25 4. 40 2. 97 4. 03 2. 68 2. 86 2. 67 2. 48 3. 72 3. 45 4. 49 3. 10 2. 41 2. 44	\$4. 34 3. 55 5. 03 3. 01 4. 41 2. 98 3. 18 2. 44 3. 91 5. 97 5. 97 5. 97 3. 30 4. 44 3. 19 3. 33 2. 31 2. 43	\$4. 66 3.38 5.79 3. 14 5. 15 3. 72 3. 52 2. 43 2. 79 5. 02 4. 129 6. 29 3. 30 4. 98 3. 55 2. 32 2. 84	\$5. 40 4. 38 5. 89 2. 70 6. 76 3. 83 2. 36 3. 2. 83 4. 86 4. 84 63. 55 7. 13 3. 80 3. 75 2. 75	\$4. 38 3. 97 7. 95 2. 91 5. 71 3. 70 2. 29 3. 43 5. 85 8. 33 7. 42, 58 8. 63 2. 17 3. 55	\$6. 41 3. 29 3. 12 2. 70 3. 83 3. 29 2. 55 4. 19 6. 72 4. 54 9. 11 2. 90 6. 60 4. 02 3. 59 2. 2. 21 4. 66	\$2.34 2.70 3.12 2.92 4.62 4.38 2.78 3.26	\$4. 64 3. 55. 58 2. 96 4. 72 3. 33 3. 2.52 2. 68 5. 10 4. 11 6. 24 3. 40 4. 3. 54 2. 27 2. 43 2. 27

Where months are missing, average is for months shown.
 Includes averages in other months as follows: New York, 1928-29, \$2.29 in August 1929; 1930-31, \$2.61 in September 1930; 1932-33, \$3.69 in August 1933; 1933-34, \$2.46 in September 1933.

Bureau of Agricultural Economics.

Compiled as follows: Chicago, October 1925-September 1927 from Bulletins 22 and 23, issued by Bureau of Railway Economics; October 1927-Oct. 12, 1929, average computed from unchecked records of Bureau of Railway Economics; beginning Oct. 14, 1929, from Chicago Fruit and Vegetable Reporter. New York, reports of California Fruit Growers Exchange. Prices weighted by number of boxes sold. These prices are a new series and are not comparable with those published in Yearbooks prior to 1930.

Table 204.—Oranges: International trade, average 1925-29, annual 1930-33

					Caler	ndar ye	ar		11 Tarangan, garangan	
Country	A ve 192	rage 5–29	19	30	19	31	19	32	193	3 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Spain Italy United States Palestine Union of South Africa. Brazil Japan Cuba	1,000 boxes 20, 935 3, 435 3, 285 2 2,123 734 571 449 120	1,000 boxes 1 0 14 0 0 0 0	1,000 boxes 30, 654 3, 744 2, 236 2, 998 1, 763 812 378 9	1,000 boxes 0 0 0 0 0 0	1,000 boxes 24, 173 3, 431 4, 849 2, 667 1, 675 2, 054 263	i 0	1,000 boxes 24,902 1,739 3,129 3,553 1,702 1,930 412	0	1,000 boxes 27, 641 4, 036 3, 399 4, 200 1, 933 2, 554 652	1,000 boxes 1 1 0 0 0 0
Total	31, 652	15	42, 594	0	39, 113	1	37, 368	4	44, 415	2
PRINCIPAL IMPORTING COUNTRIES										
United Kingdom Germany France 4 Canada Netherlands Belgium China 6 Switzerland Czechoslovakia Norway 4 Sweden Egypt 7 Hungary Poland Irish Free State Denmark Yugoslavia	0 591 (3) 292 0 0 0 4 0 0	11, 307 6, 259 3, 793 2, 237 1, 833 2, 875 462 440 416 391 357 345 293 256 255 234 161	(3) 24 0 821 (3) 328 0 0 0 1 5 0 0	13, 774 9, 946 5, 649 2, 681 1, 913 315 652 791 549 747 382 415 146 325 299 253	0 (3) 48 0 616 (3) 329 1 0 0 1 5 0 0 0 0	14, 310 7, 851 5, 778 (9) 2, 316 1, 893 218 708 708 709 1112 336 216 216	(3) 58 0 289 (3) 339 0 0 0 4 10 0 0 0	12, 939 6, 705 6, 608 2, 171 2, 229 4 2,018 298 679 567 70 240 83 336 293 156	(3) 38 0 13 (3) 408 0 0 0 2 233 0 0 0 0	16, 097 7, 633 8, 908 2, 048 2, 330 4 2, 312 102 907 845 600 947 73 297 71 1492 291 155
Total	968	29, 914	1,180	40, 900	1,000	36, 569	700	36, 701	484	44, 108

¹ Preliminary.

Bureau of Agricultural Economics; official sources. Converted to boxes of 78 pounds.

Table 205 .- Corn, canned: Pack 1 in the United States, 1922-34

State	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Maine New York Ohio Indiana Illinois Wisconsin Minnesota Iowa Maryland Other States United States	1,000 cases 1,066 1,073 665 1,939 625 598 1,959 1,944 934	1, 390 1, 208 2, 833 648 898 2, 382 2, 256 1, 134	787 846 2,310 388 1,199 1,764 1,707 1,087	1, 311 2, 375 2, 223 4, 030 1, 148 1, 541 4, 105 3, 678 2, 216	1, 038 1, 735 2, 044 3, 053 843 1, 762 3, 361 2, 133 1, 753	676 846 703 1,961 310 1,088 1,377 1,493 1,087	666 1, 138 1, 131 3, 017 578 1, 648 2, 541 1, 648 1, 164	1, 551 1, 250 3, 153 547 2, 604 2, 908 1, 865 1, 306	647 750 1, 272 3, 261 686 2, 912 2, 552 622 1, 060	1, 080 1, 871 2, 362 3, 788 712 1, 835 3, 227 1, 956 1, 339	496 405 1, 139 2, 024 140 2, 018 444 801 820	584 505 838 1,812 279	836 1, 021 1, 037 1, 548 688 1, 272 1, 266 1, 196 857

¹ Stated in cases of 24 No. 2 cans.

¹ Freilminary.
2 4-year average.
3 Included with lemons.
4 Includes some lemons.
5 Reported in value only.
6 Does not include Manchuria after June 30, 1932.
7 Beginning 1931, sweet lemons are included.

Bureau of Agricultural Economics; compiled from National Canners' Association data, 1922-26 and 1934; Bureau of Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce 1930-33.

Table 206.—Corn, sweet, commercial crop for manufacture: Acreage, production, and season average price per ton received by producers, by States; average 1928-32, annual 1933 and 1934

		Acreage		P	roductio	n	Price	for crop	of-
State	A ver- age 1928–32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928–32	1933	1934
Maine	6,600 26,100 34,680 59,860 6,630 10,860 43,000 41,090 5.750 3,400 34,760 2,980 3,450	Acres 8,800 570 12,700 3,200 10,200 26,600 47,500 4,200 4,200 3,900 2,000 19,600 730 3,200	Acres 10, 900 700 1, 050 14, 600 5, 400 21, 000 838, 500 63, 700 5, 000 11, 900 27, 000 1, 000 2, 400 29, 100 2, 130 4, 500 21, 100 21, Short tons 1 38,000 2,600 4,100 33,400 45,400 57,600 131,700 23,900 101,400 95,100 9,800 6,300 6,300 7,900	Short tons 1 29, 900 1, 500 2, 300 20, 300 5, 100 18, 400 76, 000 2, 300 10, 100 4, 100 4, 000 35, 300 2, 300	Short tons 1 39, 200 2, 200 2, 800 33, 600 9, 200 39, 900 89, 200 4, 500 27, 400 6, 000 43, 600 5, 300 8, 900	Dollars 21. 28 20. 16 15. 60 14. 28 13. 24 9. 64 11. 48 11. 28 11. 42 10. 30 9. 76 8. 90 8. 78 8. 11. 00 12. 40 13. 70 12. 48	Dollars 12. 80 13. 90 10. 90 10. 90 9. 60 7. 80 7. 60 10. 00 7. 20 7. 20 7. 40 8. 70 8. 50 7. 60	Dollars 14, 90 14, 50 10, 80 11, 00 10, 00 7, 20 8, 30 7, 50 9, 70 8, 00 6, 00 9, 50 10, 00 8, 70 9, 8, 89	
Total	313, 950	199, 670	286, 720	628, 000	394, 300	495, 600	11. 50	8.01	8.44

¹ Tonnage in busk.

Bureau of Agricultural Economics; estimates based on returns from canning establishments.

Table 207.—Cranberries: Production and average price per barrel received by producers, by States, average 1927-31, and annual 1933 and 1934

		Production	1	Price for crop of-		
State	Average, 1927-31	1933	1934 1	1933	1934 1	
Massachusetts New Jersey Wisconsin Washington Oregon United States	Barrels 386, 800 117, 800 40, 200 13, 296 5, 160 563, 256	Barrels 506, 000 142, 000 47, 000 4, 800 3, 900	Barrels 290,000 70,000 59,000 18,300 6,000	Dollars 5. 50 5. 50 6. 75 7. 95 7. 95 5. 61	Dollars 10.00 11.00 11.50 11.50	

¹ Preliminary.

² Other States includes Colorado, Idaho, Kansas, Kentucky, Missouri, Montana, Oklahoma, Oregon, South Dakota, Virginia, Washington, and Wyoming.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 208.—Cucumbers, commercial crop: Acreage, production, and season average price per bushel received by producers; average 1928-32, annual 1933 and 1934

		Acreage		P	roductio	n	Price	for crop	of—
Utilization, marketing season, and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
For market: Fall Early (sec. 1) Early (sec. 2) Second early Intermediate Late (sec. 1) Late (sec. 2)	7, 780 7, 710 1, 890 1, 160	Acres 1, 600 10, 400 10, 570 5, 150 8, 060 2, 690 2, 240	Acres 1,750 9,300 14,750 5,200 7,650 2,300 1,040	1,000 bushels 1 104 2 1, 128 2 1, 289 2 783 984 220 99	1,000 bushels 1 101 484 774 300 907 207 121	1,000 bushels 1 171 572 1,049 385 988 242 73	Dollars 2.47 1.88 .74 .84 .85 .95 1.15	Dollars 1, 50 1, 58 .71 .53 .47 .59 .85	Dollars 1. 19 1. 68 . 71 . 64 . 59 . 69 1. 18
Total	46, 850	40, 710	41,990	2 4, 607	2,894	3, 480	1.12	. 79	. 86
For pickles: Massachusetts New York Ohio Indiana Illinois Michigan Wisconsin Minnesota Iowa Missouri Maryland Virginia Mississippi Louisiana Texas Colorado Washington Oragon California Other States 3	3,980 4,430 1,280 21,980 21,980 1,620 1,740 4,510 4,510 1,890 1,890 1,890 1,980 1,980 1,980 1,980 1,980 1,980 1,980 1,980 1,980	400 4, 000 4, 200 1, 460 20, 000 6, 600 1, 220 1, 500 3, 000 400 400 900 900 1, 050 3, 800 1, 050 3, 800 1, 050 3, 800 1,	400 3,000 6,050 6,700 3,200 22,500 11,300 1,600 3,000 1,000 1,200 1,200 1,200 1,700 1,700 7,700	68 453 263 448 69 973 608 123 111 57 125 144 41 42 224 66 134 471 388	80 860 210 179 110 1,120 337 39 97 10 154 258 9 24 33 38 80 28 110 143 357	20 255 369 201 58 1,035 68 26 4 197 162 244 40 36 132 36 105 526	. 62 . 80 . 93 . 73 . 85 . 75 . 76 . 77 . 79 . 62 . 63 . 61 . 74 . 63 . 68 . 68 . 68 . 68	.30 .50 .43 .46 .52 .43 .34 .35 .30 .40 .55 .38 .38 .48 .55 .55 .55 .55 .55 .55 .55 .55 .55 .5	.30 .60 .455 .466 .70 .48 .42 .41 .34 .40 .577 .36 .45 .42 .42 .42 .43 .45 .45 .45 .45 .45 .45 .45 .46 .47 .47 .47 .47 .48 .48 .48 .48 .49 .49 .49 .49 .49 .49 .49 .49 .49 .49
Total	79, 180	57,760	79, 760	4,972	3,738	4,358	. 73	. 45	. 47

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 209.—Cucumbers: 1 Car-lot shipments, by State of origin, 1923-34

						Calenda	ir year					
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York New Jersey Ohio Indiana Indiana Illinois Delaware Maryland Virginia North Carolina South Carolina Georgia Florida Alabama Arkansas Louisiana Texas Other States	Cars 283 258 68 15 225 446 84 1,175 720 45 1,647 367 24 6 46 185	Cars 694 276 111 16 77 240 311 387 1, 639 918 154 1, 381 576 93 28 147 134	Cars 686 481 91 57 245 302 598 448 1,562 72 1,963 706 145 6 72 264 8,492	Care 456 261 187 104 150 304 479 200 869 687 62 2, 048 684 36 316 195 7, 272	Cars 607 368 203 135 101 366 692 339 935 72 2,300 583 228 36 178 178 178 178 178 178 178 178 178 178	Cars 1,001 270 191 147 148 214 563 229 812 663 76 1,572 606 328 58 382 108	Curs 529 161 119 126 118 168 469 179 643 135 2,271 795 113 294 108 7,469	Cars 907 117 131 63 254 119 527 166 66 11, 107 162 1, 137 882 131 144 892 232	Cars 714 149 208 35 151 225 680 148 439 716 82 1,463 470 107 93 678 122	Curs 574 574 104 21 94 155 280 100 527 738 159 699 259 124 121 83 4,722	Cars 699 32 74 111 65 182 483 69 235 683 216 679 193 18 88 346 61	Cars 421 57 211 155 53 116 283 49 288 572 20 544 317 68 3,966

¹ Cucumbers for pickling are not included. ² Preliminary. ³ Principally hothouse stock.

¹ Bushels containing approximately 48 pounds.
² Includes some quantities not harvested on account of market conditions: 1,551,000 bushels in 1930; 234,000 in 1931, and 263,000 in 1932. Price refers to harvested portion of crop.
³ Other States includes Alabama, Connecticut, Delaware, Florida, Kentucky, Maine, Nebraska, New Jersey, North Carolina, Oklahoma, Pennsylvania, South Dakota, Utah, and Wyoming.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country. Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 210.—Dates: Production and average price per ton received by producers, California, 1925-34

Item	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
Productionshort tons_ Pricedollars_	340 282	522 342	710 302	817 262	865 222	1, 560 140	1, 200 60	2, 150 40	2, 200 70	2, 610 75
Farm value, basis average price 1,000 dollars	96	179	214	214	192	218	72	86	154	196

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 211.—Figs: Production, and average price per ton received by producers, California and Texas, 1924-34

	Dri	ed, Califor	nia		l fresh and California	l canned,	Pres	serving, Te	xas
Year	Produc- tion	Price	Farm value, basis average price	Produc- tion	Price	Farm value, basis average price	Produc- tion	Price	Farm value, basis average price
	Short		1,000	Short		1,000	Short		1,000
	tons	Dollars	dollars	tons	Dollars	dollars	tons	Dollars	dollars
1924	8, 500	100,00	850	2, 135	104.00	222	1,180	102,00	120
1925	9,600	110.00	1,056	3,075	100.00	308	2, 240	85.00	190
1926	11, 350	95.00	1,078	5, 100	112.00	571	4,978	68, 00	339
1927	12,000	45.00	540	5, 400	100.00	540	4,879	68, 00	332
1928	11,500	45.00	518	6, 130	87,00	533	6,513	65, 50	427
1929	17,000	90.00	1,530	7, 300	100,00	730	2,778	70.00	194
1930	21,000	48.00	1,008	7,700	90.00	693	2,961	70.00	207
1931	17,000	37,00	629	6,300	74,00	466	1,851	65, 00	120
1932	17,000	25. 47	433	6,500	36, 50	237	504	50,00	25
1933	19,000	43.80	832	5,900	50. 50	298	655	65.00	43
1934 1	19,500	43.15	841	9,000	51.85	467	966	62. 20	60

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

Table 212.—Grapes: Production, average price per ton received by producers, and foreign trade, United States, 1919-34

					- Court				
]	Production				Foreign	trade, yea	r beginning	g July 1
Year	Total,			United States	United States farm			Net ex	ports 2
Loui	United States	California	Other States	price	value, ba- sis aver- age price	Domestic exports	Imports	Total	Percent- age of produc- tion
	Short tons	Short tone	Short tons	Dollars	1,000 dollars	Chart tame	Chart tana	Short town	Pomound
1919	1,575,587			17000018	aonars	מויטו ודטוומ	6, 404	Short tons 3 6, 290	
1920	1,520,570	1, 273, 000	247, 570			1 8	12, 018		
1921	1,219,546	1,100,000	119, 546			4 86	9, 397		
1922		5 1, 806, 000				7,011		3 9, 139	
1923	2, 252, 206					10, 128	10, 015	198	(0)
1924	1,776,047				69, 646	10, 151	1,608	8,566	.5
1925		§ 2, 050, 000	150, 674	32. 17	66, 355	12, 134	1,415	10, 735	.5
1926		5 2, 129, 000		26. 92	65, 262	15, 396	1,011	14, 414	.6
1927		5 2, 406, 000	183, 652			19, 410	1,735	17,747	.7
I928	⁴ 2, 649, 739		283, 739			27, 819	1,703		
1929	2,080,547	1,827,000	253, 547				2, 687	20, 448	
1930		2, 181, 000						22, 107	
1931	1,021,315	1,320,000	301, 315	22, 39			3, 013	10,902	.7
1932		5 1, 926, 000		13. 16					
1934 7		5 1, 660, 000 1, 544, 000					3, 928	9, 416	, . 5
TAOR	1,110,100	1 1,044,000	231, 168	20. 01	35, 519				

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. Prices are based upon returns from crop reporters.

<sup>Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1920–26; January and June issues, 1927–34.

Total exports (domestic plus foreign) minus total imports. Beginning 1933–34 domestic exports minus imports for consumption. (See introductory text.)

Net import equals total imports minus total exports (domestic plus foreign).

January-June 1922; reported in value only prior this date.

June 1922; reported in value only prior this date.

Includes some quantities not harvested on account of market conditions as follows: 100,000 tons in 1922; 133,000 in 1925; 15,000 in 1926; 142,000 in 1927; 133,000 in 1928; 433,000 in 1930, including 316,000 tons sold but left on the vines; 10,000 in 1931; 154,000 in 1932; and 3,000 in 1933. Price and value are based on the quantities actually harvested, plus a quantity of fruit that was sold but left on the vines in 1930.

Less than 0.05 percent.

Preliminary.</sup>

⁷ Preliminary.

Table 213.—Grapes: Production and average price per ton received by producers, by States, average 1927-31, and annual 1933 and 1934

		Production		Price for cr	op of—
State and division	Average, 1927-31	1933	1934 1	1933	1934 1
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	Short tons 29 48 36 360 239 1, 207 76, 540 2, 835 22, 798	Short tons	Short tons 7 29 11 307 171 1, 023 49, 400 2, 464 18, 981	Dollars 80, 00 80, 00 80, 00 60, 00 70, 00 55, 00 24, 00 38, 00 25, 00	Dollars 95, 00 95, 00 85, 00 80, 00 80, 00 80, 00 40, 00 27, 09
North Atlantic	104, 091	87, 041	72, 393	25. 34	30. 65
Ohio Indiana Illinois. Michigan Wisconsin Minnesota. Lowa. Missouri. Nebraska. Kansas	23, 724 2, 608 5, 223 57, 150 320 233 6, 430 8, 474 2, 398 4, 066	27, 412 2, 590 5, 986 58, 562 357 307 6, 624 9, 880 1, 824 4, 158	22, 720 2, 812 5, 658 61, 145 274 194 5, 060 7, 540 1, 216 2, 574	29. 00 26. 00 26. 00 20. 00 70. 00 70. 00 35. 00 60. 00 45. 00	35. 00 30. 00 30. 00 25. 00 75. 00 40. 00 40. 00 65. 00
North Central	110, 626	117, 700	109, 193	26, 41	30. 46
Delaware	2, 015 714 1, 897 994 4, 461 966 860 861	2, 448 596 1, 666 990 4, 661 958 759 767	2, 430 614 1, 692 944 4, 640 829 738 1, 026	45. 00 55. 00 75. 00 80. 00 45. 00 65. 00 90. 00 80. 00	50. 00 50. 00 70. 00 85. 00 65. 00 70. 00 95. 00 75. 00
South Atlantic	12, 768	12, 845	12, 913	58, 23	66 . 44
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana. Oklahoma Texas.	898 1, 014 619 232 10, 193 46 2, 341 1, 626	1, 174 1, 155 625 231 12, 120 41 2, 610 1, 820	1, 113 1, 110 641 228 16, 640 44 2, 112 1, 595	45. 00 55. 00 65. 00 75. 00 26. 00 75. 00 40. 00 55. 00	50. 00 60. 00 60. 00 80. 00 25. 00 70. 00 45. 00 60. 00
South Central	16, 969	19, 776	23, 483	35. 24	33, 60
Idaho Colorado New Mexico Arizona Utah Nevada Washington Oregon California Wine varieties Raisin varieties Dry \$ Not dried Table varieties	541 385 832 1, 671 1, 008 150 5, 325 2, 434 2 2, 020, 000 2 434, 800 2 24, 400 2 308, 200 2 379, 400	488 400 768 2,016 930 92 5,320 2,205 21,660,000 420,000 195,000 190,000 270,000	574 459 1, 336 1, 732 1, 200 107 5, 538 2, 240 1, 544, 000 446, 000 154, 000 183, 000	55. 00 60. 00 35. 00 50. 00 86. 00 17. 00 20. 00 18. 13 19. 75 14. 93 17. 40 17. 30 14. 80	47, 00 44, 00 44, 00 48, 00 80, 00 21, 00 28, 00 18, 68 14, 80 20, 00 23, 80
Western	2 2, 032, 405	2 1, 672, 219	1, 557, 186	16, 22	18. 19
United States	2 2, 276, 859	2 1, 909, 581	1, 775, 168	17. 75	20. 01

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

¹ Preliminary.
2 Includes some quantities not harvested on account of market conditions as follows: Wine varieties, 1928, 18,000 tons; 1930, 40,000; 1931, 10,000; raisin varieties (not dried), 1928, 60,000 tons; 1930, 319,000 including 318,000 sold but left on the vines; table varieties, 1927, 142,000 tons; 1928, 75,000; 1930, 74,000; 1933, 3,000. Prices and value are computed on the harvested crop, plus a quantity of fruit that was sold but left on the vines in 1930.
3 Dried basis: 1 ton of dried raisins equivalent to 4 tons of fresh grapes.

Table 214.—Grapes: Car-lot shipments, by State of origin, 1923-34

Otata					Crop	-moven	ient sea	son 1				
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York. Pennsylvania. Michigan Iowa. Missouri. Arkansas. Washington. California. Other States.	Cars 4, 312 847 4, 202 217 58 33 62 55, 348 257 65, 336	Cars 5, 641 1, 166 4, 680 79 101 243 83 57, 695 245 69, 933	Cars 3, 763 589 398 50 166 394 191 76, 066 261 81, 878	Cars 7, 242 1, 350 3, 081 176 686 1, 170 125 64, 327 433 78, 590	Cars 3,050 689 2,023 196 108 108 167 75,925 411 82,677	Cars 3,750 1,076 1,571 234 415 998 235 73,157 332 81,768	395	271	Cars 4, 240 1, 290 528 185 329 313 94 39, 777 190 46, 946	Cars 1,670 613 892 203 170 233 73 42,239 178 46,271	Cars 1, 129 421 592 118 111 190 38 29, 282 144 32, 025	Cars 412 355 538 113 91 77 56 30, 379 91 32, 112

¹ Crop-movement season extends from June 1 through December of a given year. Figures for California include shipments in January, February, and March following the regular crop-movement season. ² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 215.—Grapes: Number of packages of California varieties sold, and weighted season average price, auction sales in 11 morkets, 1929-34

** *	Num	ber of p	packag	es (cra	tes or I	ugs) ³	Average price per package					
Variety or type	1929	1930	1931	1932	1933	1934	1929	1930	1931	1932	1933	1934
Flame Tokay Emperor Red Malaga Ribier Sultanina (Thompson Seedless) Malaga Muscat Alicante Bouschet Carignane Cornichon Mataro Mission Petit Syrah Zinfandel	3ands 1, 867 56 113 89 2, 737 2, 045 2, 754 4, 759 1, 541 199	2, 485 41 119 152 2, 377 2, 096 2, 455 5, 123 1, 973 268 176 283 235	3ands 1, 591 157 184 1, 555 2, 976 931 3, 480 1, 654 172 308 113	8ands 1, 480 703 274 251 2, 237 1, 351 2, 770 3, 845 1, 476 132 204 179 152	3ands 1, 469 649 195 224 1, 779 1, 162 1, 467 1, 957 737 147 40 127 16	788 275 346 2, 329 1, 558 807 2, 339 858 163 31 50 26	Dol. 1. 42 2. 20 1. 86 1. 48 1. 37 1. 06 1. 29 1. 14 1. 26 1. 14	1. 06 1. 79 1. 67 1. 28 1. 08 1. 08 1. 11 . 97	1. 61 1. 93 1. 71 1. 53 1. 22 1. 18 1. 16 1. 11	1. 11 1. 17 1. 43 1. 27 . 90 . 76 . 91 . 73 . 94	1. 34 1. 65 1. 51 1. 43 1. 11 1. 99 1. 07 1. 10 1. 01 1. 22	1. 67 1. 79 1. 74 1. 52 1. 15 1. 11 1. 08 1. 02 1. 29 . 97 1. 10
Total or average	18, 472	18, 895	15, 000	16, 363	10, 596	11, 500	1. 29	1.11	1, 29	. 96	1. 17	1. 29

Bureau of Agricultural Economics; compiled from daily reports of the fruit and vegetable market news service. Only principal varieties shown.

Season beings about Aug. 1 and ends in November.
 Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, Minneapolis, New York, Philadelphia, Pittsburgh, and St. Louis.
 Packages containing about 28-28 pounds.

Table 216.—Grapes, Concord: Average l. c. l. price per 12-quart basket to jobbers, specified markets, by State of origin, October 1925-34

d	Price o	of New Yo	rk Concord	ls at—	Price of Michigan Concords				
Season	Boston	New York	Philadel- phia	Pitts- burgh	Chicago	Minne- apolis	St. Louis		
1925	Cents 102 61 56 60 57 32 38 43	Cents 114 62 61 54 51 36 31 35 41	Cents 104 56 64 49 51 54 34 31 36 43	Cents 109 60 64 51 48 48 29 24 29	Cents 109 43 55 44 41 41 32 18 26 31	Cents 118 67 76 59 56 53 44 26	Cents 56 65 53 49 56 42 23 31 35		

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in the various markets.

Table 217.—Lettuce: Car-lot shipments, by State of origin, 1923-34

					Crop-	movem	ent seas	on 1				
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York New Jersey North Carolina South Carolina Florida Idaho Colorado Arizona Washington California Other States	Cars 3, 817 456 718 576 2, 926 1, 241 1, 436 834 1, 082 13, 916 791	Cars 3, 698 416 714 424 2, 490 533 1, 036 1, 776 673 17, 040 661	Cars 3, 821 463 537 736 2, 190 500 3, 068 2, 689 820 20, 999 658	Cars 3, 019 303 540 372 707 398 2, 752 4, 572 904 25, 126 541	Cars 3, 496 308 447 369 950 196 2, 848 7, 679 1, 151 28, 502 400	Cars 3, 140 144 477 241 880 72 2, 368 9, 325 1, 240 32, 122 319	Cars 3, 704 169 363 310 1, 117 76 2, 109 9, 285 1, 747 33, 854 286	Cars 3, 219 27 364 169 560 154 1, 610 8, 431 2, 230 38, 736 218	Cars 3, 291 18 498 278 940 1, 904 7, 850 1, 778 35, 211 151	Cars 2, 500 10 110 46 440 237 7, 021 1, 595 34, 869 161	Cars 1, 266 1 195 115 465 387 7, 216 1, 466 30, 978 187	Cars 898 44 84 420 482 460 6,472 1,427 33,124 281
Total	27, 793	29, 461	36, 509	39, 277	46, 346	50, 328	53, 020	55, 718	51, 199	47, 587	42, 940	43, 692

¹ Crop-movement season covers 15 months, from October of the previous year through December of the given year, i. e., 1923 season begins in October 1922 and extends through December 1923.
² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 218.—Lettuce, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928–32, annual 1933 and 1934

		Acreage		Р	roductio	n	Price	for crop	of—
Group and State	A ver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Early: ² Arizona	Acres 14,860 32,370 1,910	Acres 12, 400 30, 000 1, 650	Acres 11,000 31,500 1,800	1,000 crates 1 1,374 3,870 531	1,000 crates 1 1,178 3,090 574	1,000 crates ¹ 825 ³ 3,087 594	Dollars 1, 55 1, 71 1, 35	Dollars 1.10 1.35 .84	Dollars 1.60 1.30 .94
Lettuce Escarole	1,340 570	950 700	1,100 700	314 217	280 294	260 334	1. 45 1. 20	. 96 . 72	1. 12 . 80
Texas	600	100		46	6		1.00	. 50	
Total	49,740	44, 150	44, 300	5, 821	4, 848	3 4, 506	1.62	1. 23	1.31
Second early: Arizona California, other North Carolina South Carolina	15,580 29,190 1,350 520	13, 000 27, 250 1, 350 400	14,000 27,550 700 250	1, 523 3, 119 136 77	1, 339 3, 134 101 46	1, 470 3, 719 42 38	1, 71 1, 64 1, 32 1, 62	1. 60 1. 15 1. 00 1. 00	1. 35 2. 03 2. 80 1. 40
Total	46, 640	42, 000	42, 500	4,855	4, 620	5, 269	1.65	1. 28	1.84
Intermediate: Idaho. New Jersey Oregon. Virginia. Washington	70 1,040 90 230 2,800	80 1,000 180 200 4,100	250 900 200 160 4,500	10 219 8 43 3 571	12 250 15 35 3 779	50 194 15 24 855	1. 53 1. 53 1. 03 1. 58 . 89	.75 1.10 .60 1.50	1. 25 1. 10 . 70 1. 60
Total	4, 230	5, 560	6, 010	3 851	8 1, 091	1, 138	1.10	.76	. 70
Late (sec. 1): California Colorado. New Mexico. New York Pennsylvania	7,860	9, 250 5, 630 200 5, 400 250	16, 100 5, 480 480 5, 000 250	1,400 3 800 18 1,368 39	1,304 563 19 837 45	1,980 493 43 1,000 40	1.96 .99 1.15 1.31 1.44	1. 88 1. 00 1. 20 . 75 . 90	1. 50 . 80 1. 70 . 40 . 85
Total	25, 210	20, 730	27, 310	3 3, 625	2, 768	3, 556	1, 50	1. 34	1.09
Late (sec. 2): California, other Idaho. New Jersey. Oregon. Washington	1 250	26, 600 700 750 120 500	31,000 900 700 1,000 600	3, 684 55 173 3 16 3 83	3, 644 126 169 18 90	3, 999 180 105 170 132	1.76 1.04 1.60 .96 1.10	1. 46 . 90 . 88 . 85 . 95	1. 25 . 65 1. 20 . 35 . 45
Total	29, 450	28, 670	34, 200	3 4, 011	4, 047	4, 586	1, 73	1, 40	1. 17
Grand total	155, 270	141, 110	154, 320	³ 19, 163	³ 17, 374	3 19, 055	1, 59	1, 27	1. 35

¹ Western crates containing approximately 75 pounds (mostly packed 4 to 6 dozen heads per crate).

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 219.—Olives: Production and average price per ton received by producers, California, 1925-34

Item	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
Production short tons- Price dollars. Farm value, basis average price 1,000 dollars.	14, 000 60. 00 840	12,000 80.00 960	21, 500 80, 00 1, 720	23, 900 80. 00 1, 912	21,000 75.00 1,575	70.00	16,000 46.00 736	22, 000 29. 00 638	14, 000 58. 00 812	16,000 68.00 1,088

¹ Preliminary.

^{*} Vestern testes containing approximately 75 points (mostly packed 4 to 6 dozen neads per crate).

* Sesson begins in fall of the previous year.

* Includes some quantities not harvested on account of market conditions: California, Imperial, 300,000 crates in 1934; Colorado, 389,000 crates in 1932; Oregon, late crop, 10,000 crates in 1932; Washington, intermediate crop, 96,000 crates in 1932 and 95,000 in 1933, and late crop, 15,000 in 1932. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. Data for earlier years in 1928 Yearbook, table 165.

Table 220.—Olive oil (including inedible): International trade, average 1925-29, annual 1930-33

					Calend	ar year				
Country	Ave 1925		19	30	19	31	19	32	193	3 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Spain taly Tunis Freece Ligeria Lurkey Syria and Lebanon 3 Morocco Yugoslavia	164, 975 66, 494 53, 947 28, 599	1,769 1,458 2 123	235, 678 159, 698 109, 301 18, 514 54, 152 10, 452 6, 397	0 132, 561 151 8 7 79 8 4 413 1, 361	206, 921 129, 470 28, 910 21, 604 18, 309 40, 254 7, 199	180, 581 713 3 5 49 3 35 351 2, 762	138, 805 99, 761 52, 792 68, 113 40, 282	83, 518 814	95, 136 76, 934 136, 821 62, 060 18, 399	81, 888 36 1, 662 7, 177
Total			594, 517	135, 118	452, 849	184, 898	412, 606	86, 588	389, 586	90, 871
PRINCIPAL IMPORTING COUNTRIES United States Argentina France United Kingdom	13, 958 324	135, 847 95, 334 40, 146 19, 100	25, 446 269	162, 860 130, 715 72, 390 21, 179	22, 389 208	46, 792 19, 604	20, 238 390	131, 942 79, 956 55, 635 24, 344	23, 184 0	125, 337 83, 183 61, 095 26, 871
Duba Dhile Uruguay Brazil Norway Macao (Portuguese China) 3 Portugal		14, 103 13, 410 12, 808 7, 098	998	6, 741 18, 753 18, 399 5, 882 5, 151	796	5, 288 315, 115 5, 848 2, 960 4, 642	0	1, 758 310, 632 11, 595 8, 500	0 0	10,695
Portugal Palestine Canada Switzerland Egypt Germany Mexico Rumania	32 53 - 53	5, 726 4, 044 3, 443 2, 666 2, 631 2, 230	1, 147 0 0 24 50	2, 148 6, 487 4, 847 3, 907 3, 393 3, 827	1,762 0 9 9 145	94 5, 590 4, 096 2, 394 2, 955 2, 136	1,576 0 9 6 41	5, 153 4, 651 2, 875 3, 023 3 2, 853	0 7	2, 798 3, 065
Australia 8 Belgium Peru Bulgaria Czechoslovakia Sweden 6 Philippine Islands Netherlands New Zealand	1 33 33 - 0 - 24 - 4	1,545 1,319 1,272 1,227 958 454 312 181	222 222 223 243 253 254 264 264 264 264 264 264 264 264 264 26	2, 530 1, 671 1, 188 507 2, 1, 208 840 292 280 312	13 15 0 0 29 0	1, 484 1, 209 836 496 1, 187 656 346 278	0 111 3 0 0 3 0 29	2, 295 1, 344 854 434 1, 279 748 339 424 291	8 0 0 0 41	1, 263 195 1, 109 778 323 302
Denmark Total	-	154 398, 178		341 524, 890		264 358, 269				203 334, 592

Bureau of Agricultural Economics; official sources except where otherwise noted Conversions made on the basis of $7.5~\rm pounds$ to the gallon.

Preliminary.
 2-year average.
 International Yearbook of Agricultural Statistics.

⁴⁴⁻year average.
5 Beginning 1931, includes sesame oil.

Table 221.—Onions, commercial crop: Acreage, production, and season average price per bushel received by producers, by States; average 1928-32, annual 1933 and 1934

		Acreage		P	roductio	n	Price	for crop	of—
Group and State	A ver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934
Early (Bermuda): Louisiana ²	Acres 1, 610 18, 540 2, 630	Acres 500 18,000 1,150	Acres 550 21,700 1,850	1,000 sacks 1 86 3 1,847 3 337	1,000 sacks 1 18 1,170 167	1,000 sacks 1 16 3 1, 562 204	Dollars 2.03 1.83 1.84	Dollars 1. 75 1. 05 1. 85	Dollars . 1.00 1.10 1.65
Total	22, 780	19, 650	24, 100	3 2, 270	1, 355	3 1, 782	1.84	1. 16	1. 17
Intermediate (domestic): New Jersey	2, 460 570 540 1, 820	3, 600 550 340 1, 800	3, 500 650 350 2, 600	338 45 69 244	540 38 36 225	560 58 30 390	1. 65 1. 39 . 96 1. 71	1. 35 2. 20 1. 50 1. 80	1. 70 1. 35 1. 35 1. 80
trict	1,030	1,000	950	156	130	43	1.45	1. 30	1.40
Washington, Walla Walla district California	780 1, 130	660 1, 150	900 2, 140	195 3 290	152 345	266 439	.84 .88	. 70 1. 35	. 80 1. 10
Total	8,330	9, 100	11,090	3 1, 337	1, 466	1, 786	1. 29	1.37	1. 42
Late (domestic): 4 Eastern: Massachusetts New York Pennsylvania	2, 900 7, 740 350	3, 300 8, 600 290	2, 900 9, 000 330	606 1,663 51	693 2,021 38	783 2,475 53	1.32 1.27 1.43	1. 25 1. 25 1. 25	1. 15 1. 10 1. 15
Total	10,990	12, 190	12, 230	2, 320	2, 752	3, 311	1.27	1. 25	1.11
Central: Ohio	8,470 750 6,590 1,030 2,170	4, 610 7, 000 750 7, 600 1, 150 2, 250 1, 120	4, 200 5, 100 400 8, 720 1, 000 1, 200 700	710 1,410 101 1,124 173 387 3 293	567 756 64 1,520 167 484 134	504 484 32 1,918 205 126 63	1. 22 1. 20 1. 39 1. 19 1. 21 1. 15 1. 17	1. 05 . 95 1. 50 1. 05 1. 05 . 90 . 95	1. 20 1. 25 1. 25 1. 20 1. 05 1. 40 1. 55
Total	26, 520	24, 480	21, 320	³ 4, 198	3, 692	3, 332	1.19	1.01	1. 21
Western: Idaho Colorado Utah Nevada. Washington, other Oregon California	1, 360 5, 220 1, 020 6 160 880 1, 130 5, 790	1, 550 4, 150 900 170 1, 000 1, 650 4, 530	2, 350 4, 440 750 150 1, 200 1, 800 3, 260	3 381 3 924 253 5 28 230 275 3 999	395 652 194 15 260 462 824	811 533 221 14 306 432 561	1.09 1.11 1.02 5.91 1.04 1.23 1.34	.75 .80 1.15 1.00 .53 .85	. 75 . 88 . 95 . 80 . 80 . 90
Total	15, 530	13, 950	13, 950	\$ 3,084	2,802	2,878	1.18	. 83	. 88
Total, late	53, 040	50, 620	47, 500	3 9, 602	9, 246	9, 521	1. 21	1, 03	1.08
Grand total	84, 150	79, 370	82, 690	13, 209	12,067	13,089	1.31	1.09	1. 14

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

¹ Sacks containing 100 pounds.
² Includes a small acreage of Creole onions.
² Includes some quantities not harvested on account of market conditions: Early California, 88,000 sacks in 1928 and 25,000 in 1932; Texas, 830,000 sacks in 1981 and 186,000 in 1934; intermediate-California, 116,000 sacks in 1932; late-California, 43,000 sacks in 1930 and 259,000 in 1932; Colorado, 83,000 sacks in 1929 and 99,000 in 1932; Idaho, 97,000 sacks in 1932; Iowa, 6,000 sacks in 1932.
⁴ Average price for late States is computed only to Dec. 1.
⁵ Short-time average.

Table 222 .- Onions: Car-lot shipments, by State of origin, 1923-24 to 1933-34

State	Crop-movement season ¹												
	1923-24	1924-25	1925-26	1926–27	1927–28	1928-29	192 9- 30	1930-31	1931–32	1932-33	1933-342		
Aassachusetts	335 2,714 4,610 378 1,222 273 189 882 274 263 3,027 256 928 928 177 1,126	Cars 2, 481 5, 335 403 4, 493 2, 735 241 1, 623 212 487 1, 176 345 2, 266 3, 918 322 1, 064 216 1, 016 5, 571 235 30, 796	Cars 2, 856 5, 109 2, 856 4, 158 2, 91 1, 402 361 674 1, 365 138 152 3, 941 8, 76 1, 809 5, 603 540 31, 646	Cars 3, 586 3, 720 253 2, 287 4, 493 1, 171 270 684 1, 434 1, 434 1, 178 134 5, 316 678 3, 013 536 33, 062	Cars 2, 495 4, 102 295 4, 070 5, 000 142 2, 653 279 1, 289 1, 333 131 145 4, 028 8, 499 35, 192	Cars 1, 416 1, 807 3, 939 180 2, 664 294 1, 077 1, 430 1, 77 1, 430 1, 152 2, 244 1, 1, 153 1, 163 4, 402 351 33, 326	Cars 1, 854 3, 985 239 2, 988 5, 195 142 2, 964 241 1, 448 1, 492 234 59 7, 232 731 4, 042 950 1, 417 660 4, 144 264 40, 281	Cars 1, 474 4, 226 193 2, 293 6, 879 193 5, 499 219 1, 141 1, 762 109 12 6, 812 6, 877 2, 124 730 4, 067 40, 067	Cars 1, 360 3, 272 1, 341 2, 750 69 2, 800 199 740 789 1, 315 5, 718 1, 482 4, 295 1, 062 3, 384 328	Cars 597 2,570 1,397 4,878 1,527 1,031 61 13 8,341 299 1,593 472 645 3,519 1,964 1,82	Cars 599 2, 931 150 958 1, 827 4, 913 175 1, 710 708 383 4, 924 1, 1088 1, 723 472 986 1, 365 3, 044 150		

¹ Crop-movement season covers 16 months, from March of one year through June of the following year.
² Preliminary.
³ Includes 1 car in July 1933.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country. Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 223.—Onions: Average l. c. l. price per 100 pounds to jobbers, New York and Chicago, 1925-26 to 1934-35

	Bermuda varieties						Various common varieties								
	April		May		June										
Market and season	Yellow	Crystal White Wax	Yellow	Crystal White Wax	Yellow	Crystal White Wax	July	August	September	October	November	December	January	February	March
New York: 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1933-34 1934-35 Ohicago: 1925-20 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1933-34 1934-35	4. 15 5. 60 5. 27 4. 57 4. 07 3. 87	5. 04 6. 17 4. 05 13. 11 5. 46 5. 92 5. 96 5. 23 6. 22 4. 55	4. 37 5. 64 3. 14 3. 10 2. 60 12. 78 2. 42 11. 87 6. 33 3. 97 5. 66 3. 04 3. 06 2. 78 3. 24 2. 42 2. 38	3. 33 	3. 50 2. 96 3. 20 1. 69 3. 38 3. 18 7. 94 3. 21 5. 57 2. 31 3. 45 3. 02	2. 00 3. 20 8. 39 3. 61 6. 07 2. 64 4. 42 3. 48 41. 84 2. 92	3. 03 2. 25 1. 73 1. 49 2. 22 2. 71 4. 94 2. 34 3. 31 2. 25 3. 60 2. 98 2. 24	Dol. 2, 94 2, 26 2, 17 2, 32 1, 1, 88 2, 14 1, 17 2, 30 2, 83 3, 41 2, 25 7, 2, 72 3, 08 2, 1, 23 2, 61	1. 59 1. 72 3. 53 2. 02 1. 70 2. 52 2. 42 2. 07 1. 35 2. 480 2. 74 2. 29 2. 27 2. br>27 27 27 27 27 27 27 27 27 27 27 2	1. 82 1. 60 3. 62 1. 91 1. 53 2. 74 2. 25 3. 11 1. 92 1. 68 3. 66 2. 12 2. 14 2. 19 2. 19 1. 19 2. 25	1. 72 4. 14 1. 63 2. 97 1. 29 2. 20 2. 54 3. 35 1. 65 4. 22 2. 20 2. 78 2. 78 2. 70 1. 80	2. 74 2. 18 4. 42 2. 28 1. 55 3. 85 1. 26 2. 77 2. 52 3. 46 2. 46 2. 42 4. 59 2. 42 7. 3. 57 7. 57	3. 08 2. 60 4. 88 2. 23 1. 28 4. 58 1. 37 2. 94 3. 20 3. 31 2. 77 5. 27 2. 39 1. 51 4. 606 3. 11	2.76 2.89 5.42 2.37 1.32 4.58 1.41 3.12 2.81 5.39 2.18 5.14 1.04	3. 46 4. 25 4. 67 2. 11 1. 47 6. 38 1. 45 2. 71 3. 18 3. 92 4. 04 5. 26 1. 76 6. 86 1. 16

 $^{^1}$ No quotations for U. S. No. 1 grade; prices shown are for U. S. Commercial grade which is not comparable with U. S. No. 1. 3 Car-lot sales

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in the markets.

Average prices as shown are based on stock of U. S. No. 1 grade, except as otherwise stated; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa in order to obtain comparability.

Table 224.—Peaches: Total production, average price per bushel received by producers, and exports of the United States, 1919-341

_	•	-	•			-					
Year			Farm	Domestic exports, year beginning July ³							
	Produc- tion	Price ²	value, basis average price	Fresh	Dried	Canned 4	Total in terms of fresh	Percent- age of produc- tion			
1919 1919 1920 1921 1922 1923 1923 1924 1924 1925 1925 1927 1928 1927 1928 1929	44, 781 47, 755 51, 146 44, 335 664, 799 641, 601 664, 501	Dollars 1.89 2.04 1.48 1.33 1.37 1.24 1.36 .99 1.16 .97 -1.37 .88	1,000 dollars 98, 061 90, 784 48, 539 76, 425 61, 187 63, 365 60, 536 62, 869 45, 259 58, 578 60, 855 43, 895	1,000 pounds 5 511 13,170 15,065 16,172 14,453 17,969 22,067 19,973 12,859	1,000 pounds 12,756 3,573 6,260 5,586 12,975 4,668 3,351 6,968 6,542 12,436	1,000 pounds 54, 624 50, 374 57, 390 83, 160 81, 896 86, 634 101, 438 74, 470 75, 763	1,000 bushels 1,399 392 699 3,163 3,835 3,240 4,161 4,477 4,701 6,050	Percent 2.7 2.1 5.5 8.6 6.3 9.4 6.9 11.3 9.4 8.9 8.9			
1931 1932 1933 1934 ⁷	6 76, 689 6 42, 443 6 44, 692 6 45, 404	. 56 . 53 . 76 . 80	40, 984 18, 838 32, 340 34, 770	10, 731 3, 298 3, 371	8, 490 7, 649 7, 569	66, 300 74, 999 81, 464	3, 917 4, 032 4, 224	5. 1 9. 5 9. 5			

¹ Dried peaches converted to terms of fresh on the basis that dried peaches equal 19 percent of fresh. Canned peaches converted to terms of fresh on the basis that 24 pounds of fresh equal 1 dozen cans of 1 pound each; 48 pounds of fresh equals 1 bushel. In practice, 1 bushel of fresh fruit is figured as the equivalent of 2 dozen cans of 1 pound each. No reexports reported.

² From 1919 to 1922, Sept. 15 price; 1923-25, Sept. 15 price in North, Aug. 15 price in South; 1926-34, average price for the crop-marketing season.

³ Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26, Danuary and Lune issues, 1973-34

4 Canned peaches were reported in value only, prior to July 1, 1922.

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised, Italic figures are census returns. Prices based upon returns from crop reporters.

January and June issues, 1927-34

Canned peaches were reported in value only, prior to July 1, 1922.
No exports reported prior to Jan. 1, 1922; figures for 1921 represent exports Jan. 1, 1922, to June 30, 1922.
Includes some quantities not harvested on account of market conditions as follows: 1,297,000 bushels in 1926; 2,709,000 in 1927; 3,842,000 in 1928; 10,639,000 in 1930, including 6,180,000 sold but left on the trees; 8,063,000 in 1931, including 3,938,000 sold but left on the trees; 6,710,000 in 1932; 3,647,000 in 1933, including 1,480,000 sold but left on the trees, and 2,208,000 in 1934. Values are based on the quantity actually harvested plus a quantity of fruit that was sold but left on the trees in 1930, 1931, and 1933.

Table 225.—Peaches: Production and average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934

					· · · · ·						
	Pı	oductio	n	Pric crop			Pı	oductio	Price erop		
State and division	Aver- age, 1927- 31	1933	1934 1	1933	1934	State and division	Aver- age, 1927- 31	1933	1934 1	1933	1934
N. H. Mass. R. I. Conn. N. Y. N. J. Pa. N. Atlantic. Ohio. Ind. III. Mich. Iowa. Mo. Nebr. Kans. N. Central Del. Md. Va. W. Va. N. Car. S. Car. Ga. Fia.	141 300 195 1, 472 1, 727 1, 568 5, 151 1, 142 700 1, 893 1, 175 64 621 43 175 5, 814 301 514 858 44 858 44 1, 857 1, 857 1, 857 2 6, 363 73	18 134 26 172 1, 092 1, 144 3, 573 456 221 1, 522 215 7 204 4 14 2, 643 205 400 990 2, 112 1, 633 5, 446 57	22 241 222 442 511 228 192 528 423 53 468 5 90 1, 987 64 422 1, 610 2, 312 1, 610 5, 610 68	1. 50 1. 40 1. 45 1. 30 1. 10 1. 10 1. 16 1. 45 1. 20 1. 16 1. 30 1. 75 1. 155 1. 155 1. 100 1. 100 1. 100 1. 100 1. 100 1. 200 1. 75 1. 155 1. 100 1. 90 1. 90	1. 75 2. 00 2. 15 2. 35 1. 90 1. 40 1. 75 1. 40 1. 75 1. 10 1. 25 1. 10 1. 10	Ky	591 1, 459 976 648 1, 647 191 545 1, 384 7, 441 135 906 78 73 587 927 221 241 223, 294 27, 834 226, 245	216 580 908 494 672 158 108 782 3, 918 51 578 67 62 2240 227 222, 085 214, 626 7, 459	1, 848 198 612 1, 287 8, 574 93 1, 260 123 48 558 6 1, 200 314 220, 460 213, 501 6, 959	1. 10 1. 20 1. 30 1. 04 1. 45 1. 30 1. 75 1. 75 1. 40 1. 25 1. 15 . 48 . 54	. 75 . 75 . 85 1. 10 . 84 1. 15 1. 00 1. 20 1. 50 . 85 1. 40 . 75 1. 05 . 64 . 60
S. Atlantic	11,632	11, 233	10, 270	. 85	.89		1				

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

¹ Preliminary.
² Includes some quantities not harvested on account of market conditions as follows: 1927, 2,709,000 bushels of clingstone; 1928, 2,917,000 of clingstone in California and 925,000 bushels in Georgia; 1930, 10,139,000 of clingstone, Including 6,180,000 sold but left on the trees and 500,000 of freestone; 1931, 8,063,000 of clingstone, including 3,938,000 sold but left on the trees; 1933, 3,647,000 of clingstone, including 1,480,000 sold but left on the trees; 1934, 2,208,000 of clingstone. Prices and value are computed on the quantity actually harvested, plus a quantity of fruit that was sold but left on the trees in 1930, 1931, and 1933.

³ Mainly for canning.

⁴ Mainly for drying.

TABLE 226.—Peaches: Car-lot shipments, United States, by months, 1925-34

Season	May	June	July	August	Septem- ber	October 1	Total
1925 1926 1927 1928 1929 1930 1931 1931 1932 1933 1934 2	Cars 328 52 267 12 106 18 47	Cars 4, 951 2, 209 5, 638 1, 755 2, 374 2, 515 2, 045 357 1, 476 1, 675	Cars 17, 932 21, 793 12, 464 23, 122 10, 429 12, 956 15, 765 3, 796 9, 161 11, 656	Cars 9, 921 24, 538 13, 217 22, 822 14, 012 15, 526 23, 782 10, 690 10, 388 12, 831	Cars 7, 420 8, 847 9, 739 8, 802 8, 308 7, 333 4, 283 5, 383 7, 183 356	Cars 306 1, 026 178 462 222 142 148 525 48 9	Cars 40, 858 58, 465 41, 503 56, 975 35, 451 38, 490 46, 070 20, 751 28, 263 26, 581

¹ Figures include shipments in November as follows: 1926, 5 cars; 1932, 3 cars.

² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau

from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. See 1927 Yearbook, p. 855, for data for earlier years.

Table 227.—Peaches: Car-lot shipments, by State of origin, 1925-341

State	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
	Cars	Сатв	Cars							
New York	3, 055	2, 367	1, 159	1,744	865	2,310	956	1, 920	882	45
New Jersey	1,047	1, 145	1,089	41	544	24	88	47	5	1
Pennsylvania	204	828	514	806	732	330	658	587	274	424
Ohio	516	434	441	426	2	98	122	106	2	4
Indiana	18	416	245	398	676	(3)	533		225	1
Illinois	579	3, 010	1, 591	1,975	4,637	(3)	5, 307	46	1, 783	318
Michigan	264	675	397	514	312	183	259	292	3	80
Missouri	14	34	14	2	56		83		7	4
Delaware	148	723	524	30	540	31	495	29	2	
Maryland	70	652	366	291	495	83	149	60	156	
Virginia	39	388	461	324	623	19	446	87	747	275
West Virginia	2	353	211	166	246	32	114	39	169	1 6
North Carolina	2,037	2, 155	1,702	3, 242	1,250	2, 172	2,564	1,833	1,280	1, 161
South Carolina	239	448	644	865	602	747	862	523	719	798
Georgia	13, 513	17, 963	11,882	15, 926	5, 298	8, 623	13, 589	2,024	7,896	8,209
Kentucky	6	69	43	87	60		217	3	27	39
Tennessee	605	1,806	292	2,077	1, 144	256	1,364	6	245	777
Alabama	224	375	11	325	81	42	232		15	72
Mississippi	32	88		76	60	7	123		5	6
Arkansas	2,300	2, 529	1,780	4,013	2,679	41	4, 187	233	256	1,658
Oklahoma	113	20	118	17	121		4	3		30
Texas	1,070	964	49	278	569	21	143	20	27	16
Idaho	2	78	38	125	135	1	31	34	22	39
Colorado	834	1, 271	1.709	1, 117	1,765	1, 369	1,507	1,743	847	1,923
Utah	94	774	798	694	550	341	221	447		127
Washington	991	1,419	248	1, 741	1,554	609	912	892	121	989
Oregon	47	50	21	76	51	48	29	33	33	27
California	12, 785	17, 416	15, 145	19, 589	9. 780	21,072	10,859	9, 739	12, 507	9, 531
Other States	10	15	11	10	24	31	16	5,75	2,000	21
Total	40, 858	58, 465	41, 503	56, 975	35, 451	38, 490	46,070	20, 751	28, 263	26, 581

Crop-movement season extends from May through October of a given year. Figures for New York for 1926 and 1932 include shipments in November following the regular crop-movement season.
 Preliminary
 No shipments because of frost killing. No shipments because of frost killing.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country. Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 228.—Peaches: Average l. c. l. price to jobbers, New York and Chicago, 1925-34

	6 - t	asket carr	ier		В	ushel bask	tet	
Market and season	June	July	August	June	July	August	Septem- ber	October
New York: 1925	Dollars 3, 43 3, 14 3, 24 3, 86 3, 58 2, 96 2, 78 3, 11 3, 02 2, 23 3, 40 4, 03 3, 55	Dollars 2. 24 1. 79 2. 59 2. 17 3. 45 3. 22 2. 38 2. 94 1. 70 2. 33 2. 35 1. 96 2. 32 2. 99 3. 45 3. 18 2. 03 3. 02 1. 68	Dollars 2, 23 1, 28 2, 65 1, 62 2, 70 2, 62 2, 1, 22 1, 26 1, 57 2, 03 3, 01 1, 53 L, 44 2, 45 1, 27 1, 57 2, 11	Dollars 3, 38 3, 05 3, 10 3, 61 3, 85 4, 08 2, 97 3, 14 2, 70 3, 08 2, 44 2, 35 2, 44 2, 35	Dollars 2 22 1.74 2 80 2 01 2 95 2 94 2 14 2 81 2 20 2 45 2 06 2 18 2 93 8 04 2 01 3 05 1 94	Dollars 2, 18 1, 48 2, 94 1, 69 2, 56 2, 63 1, 50 1, 46 1, 79 2, 16 1, 79 2, 81 1, 94 2, 05 3, 02 1, 17 1, 72 2, 11 2, 47	Dollars 2.74 1.26 2.19 2.05 2.52 2.10 1.21 1.39 2.72 1.76 2.30 2.15 2.31 2.34 1.17 1.30 2.22 2.22	Dollars 2. 46 1. 17 2. 59 1. 74 2. 38 1. 44 2. 11

Bureau of Agricultural Economics. Compiled from daily market reports from Bureau representatives in the markets. Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices.

Table 229.—Pears: Total production, average price per bushel received by producers, and exports of the United States, 1919-34

and deposit of the Cristian States, 1210 34												
			Farm	Doz	nestic expo	orts year b	eginning Ju	ıly ²				
Year	Produc- tion	Price 1	value, basis average price	Fresh 3	Canned 3	Dried	Total in terms of fresh	Percent- age of produc- tion				
1919	1,000 bushels 14,204	Dollars	1,000 dollars	1,000 pounds	1,000 pounds	1,000 pounds	1,000 busheis	Percent				
1919 1920 1921 1922 1922 1923 1924 1925 1927 1926 1927 1927 1929 1929 1929	14, 891 17, 168 11, 241 20, 206 16, 967 18, 412 19, 938 24, 564 4 17, 991 4 23, 518 18, 500 21, 138 4 25, 665	1. 84 1. 08 1. 70 1. 09 1. 24 1. 43 1. 40 . 89 1. 33 1. 01	27, 376 28, 755 19, 052 22, 052 21, 091 26, 401 28, 020 21, 926 23, 819 23, 704 30, 152 18, 321	36, 785 50, 237 41, 452 71, 205 73, 877 51, 056 82, 847 62, 024 134, 670	49, 358 38, 431 53, 851 75, 876 66, 104 52, 671 82, 652 54, 709 74, 355	⁵ 2, 626 3, 655 8, 037	2, 823 2, 648 3, 107 4, 645 4, 293 3, 258 5, 388 3, 876 6, 574	14. 0 15. 6 16. 9 23. 3 17. 5 18. 1 22. 9				
1931 1932 1933 1934 6	4 23, 857 4 22, 050 4 21, 192 4 23, 474	.60 .39 .55 .70	13, 676 7, 627 10, 780 16, 193	90, 702 119, 987 111, 008	71, 570 60, 762 78, 384	6, 079 6, 257 8, 408	5, 378 5, 553 6, 279	23, 0 25, 2 29, 6				

Bureau of Agricultural Economics; production figures are estimates of the Crop Reporting Board, revised. Italic figures are census returns. Prices are based upon returns from crop reporters.

¹ From 1919 to 1925, Nov. 15 price; 1926-34, average price for the crop-marketing season.
² Canned pears converted to terms of fresh on the basis that 1 pound canned fruit is equivalent to 2 pounds fresh; dried pears converted to terms of fresh on the basis that dried pears equal 25 percent of fresh; 48 pounds fresh equals 1 bushel. No imports of pears reported. Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1923-26, January and June issues, 1927-34.
³ Exports were reported in value only prior to July 1, 1922.
⁴ Includes some quantities not harvested on account of market conditions as follows: 42,000 bushels in 1927; 62,000 in 1928; 1,292,000 in 1930; 625,000 in 1931; 2,666,000 in 1932; 1,667,000 in 1933, and 375,000 in 1934.
Prices and value are computed on the harvested crop.
⁵ January-June 1929. Not previously reported.
⁶ Preliminary.

Table 230.—Pears: Production and average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934

State and	P	roducti	on		ce for	State and	P	roducti	on	Pric erop	e for of—
division	Aver- age 1927-31	1933	1934 1	1933	1934 1	division	Aver- age 1927-31	1933	1934 1	1933	1934 1
Maine N. H. Vt. Mass R. I. Conn N. Y N. J. Pa N. Atlantic Ohio Ind Ill Mich Iowa Mo N. Central Del Md Va W. Va N. C S. C Ga Fla S. Atlantic	99 54 88 23 1, 178 111 384 1, 792 341 201 499 546 79 79 316 37 188	20 900 71 366	1,000 bu. 2 5 6 14,011 74,011 74,385 35,425 1,535 304 1745 288 24,495 145 1745 22,495 1745 1745 1745 1745 1745 1745 1745 174	Dol. 1. 05	1. 25 1. 20 1. 10 1. 15 1. 25 .65 .75 .83 .60 .55 .65 .90 1. 10	Ky_Tenn_Ala_Miss_Ark_La_Okla_Tex_S_Central_Mex_Ariz_Utah_Ney_Wash_Oreg_Calif_Western_United States.	406 40 15 74 4 3, 429 2, 554 2 9, 067 2 15, 654	944 1322 855 855 31 699 104 653 599 271 13 47 4, 264 2, 738 29, 209 216, 614	² 9, 751 ² 18, 741	Dol. 0.80 .95 .855 .95 .85 .95 .1.00 .92 .1.05 .1.35 .1.30 .1.45 .51 .48 .55	.70

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 231.—Pears: Car-lot shipments, by State of origin, 1924-25 to 1933-34

Q1 1-				Cro	p-moven	nent sons	on 1			
State	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34*
New York Ohio Ohio Illinois Michigan Delaware Maryland Alabama Texas Colorado Washington Oregon California Other States Total	Cars 2, 978 47 595 394 273 30 27 129 955 2, 456 1, 483 6, 312 567	Cars 4,510 62 614 1151 128 29 66 121 717 3,560 2,225 8,718 356 21,257	Cars 2, 263 100 858 457 249 33 12 144 750 5, 278 2, 909 11, 673 483	Cars 1, 694 130 228 536 49 32 93 213 737 2, 589 2, 977 9, 215 251	Cars 1,590 104 370 449 1 27 71 39 264 5,868 4,437 11,003 211 24,434	Cars 547 33 787 147 20 42 152 231 1,082 4,035 4,211 9,465 395 21,147	Cars 2, 661 77 154 469 13 9 135 100 249 6, 157 5, 123 13, 490 190	Cars 831 26 1,058 131 7 14 46 105 397 4,657 2,824 9,804 157	Cars 2, 342 34 490 25 36 37 92 125 3, 743 3, 574 7, 329 81	Cars 1,000 11 188 125 6 79 4,381 2,833 5,572 30 14,195

¹ Crop movement season covers 12 months, from June of one year through May of the following year. Figures for California for 1930-31, 1931-32, and 1932-33 include shipments in month preceding and following the regular crop-movement season.
² Preliminary.

¹ Preliminary. ² Includes some quantities not harvested on account of market conditions as follows: 42,000 bushels in 1927; 62,000 in 1928; 1,292,000 in 1930; 625,000 in 1931; 1,667,000 in 1933, and 375,000 in 1934. Prices and value are computed on the harvested crop.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in ear lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 232.—Peas, green, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, and annual 1933 and 1934

		Acreage		F	Production	1	Price	for crop	of—
Utilization and State	Average 1928–32	1933	1934	Average 1928-32	1933	1934	Average 1928-32	1933	1934
For market	Acres 80, 040	Acres 110, 060	Acres 100, 420	1,000 bushels ¹ ² 6, 088	1,000 bushels ¹ ² 8, 605	1,000 bushels ¹ 7, 442	Dollars 1. 51	Dollars 0. 93	Dollars 1. 29
For manufacture: Maine New York Pennsylvania Ohio Indiana Illinois Michigan Wisconsin Minnesota Delaware Maryland Montana Colorado Utah Washington Other States 4	4, 850 5, 680 12, 550 10, 130 102, 400 13, 940 2, 530 12, 570 3, 120	1, 480 27, 800 2, 000 3, 800 4, 300 16, 500 10, 700 93, 000 11, 300 2, 540 2, 330 9, 930	1, 850 32, 000 3, 000 4, 540 6, 000 9, 000 12, 400 112, 000 13, 500 2, 100 3, 480 10, 500 10, 500 12, 200	Short tons 3 1, 130 22, 990 1, 520 3, 090 11, 190 6, 710 81, 830 10, 800 1, 690 2, 700 11, 710 2, 190 5, 820	Short tons 3 1, 320 14, 320 1, 650 1, 420 7, 260 4, 550 54, 870 9, 440 1, 960 2, 790 1, 980 9, 070 5, 120 10, 270	Short tons 3 2, 330 13, 280 3, 000 1, 540 2, 610 2, 070 6, 390 71, 120 5, 800 3, 010 14, 850 2, 620 3, 430 11, 020 9, 030 12, 670	62. 40 55. 40 55. 60 45. 20 45. 40 50. 80 45. 20 55. 90 48. 80 57. 00 44. 10 54. 10 54. 30 57. 48	44. 80 41. 00 43. 50 30. 00 32. 50 43. 00 44. 00 41. 30 45. 60 30. 00 33. 30 40. 00 46. 06	57. 20 50. 40 50. 70 39. 00 48. 90 50. 60 44. 30 50. 60 52. 40 49. 00 53. 00 50. 00 51. 46
Total	223, 490	217, 430	250, 370	182, 070	136, 980	164, 770	54. 13	42.48	50.08

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Table 233.—Peas, green: Car-lot shipments, by State of origin, 1925-341

State	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York_ New Jersey Maryland Virginia North Oarolina. South Carolina. Hiorida. Mississippi. Idaho. Colorado. Washington. California. Other States.	Cars 885 20 48 303 491 104 5 149 13 35 43 569 42	Cars 1, 110 27 55 288 596 167 233 40 58 58 64 803 127	Cars 975 40 54 259 570 207 9 243 101 149 111 1, 361 100	Curs 837 38 68 281 685 247 14 250 176 348 152 1,642 63	Cars 731 28 52 222 368 244 31 199 238 459 334 2, 205 77	Curs 892 1 2 129 482 2255 6 2344 407 463 791 3, 494 128	Cars 431 13 13 232 554 226 130 282 415 559 539 3,016 120	Curs 351 1 75 284 71 146 46 349 590 829 4,891 217	Cars 123 1 90 335 100 331 100 322 445 1,087 5,912 195	Cars 39 3 3 66 264 95 745 166 281 407 606 4, 103
Total	2, 707	3, 568	4, 179	4,801	5, 188	7, 294	6, 560	7, 850	9, 047	6, 931

¹ Crop-movement season is for calendar year, except Florida and Texas, which begin in October of the preceding year.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck

not included.

Bushels containing approximately 30 pounds, unshelled.
 Includes some quantities not harvested on account of market conditions; 117,000 bushels in 1932 and 210,000 in 1933. Price refers to harvested portion of crop.
 Reported on shelled basis.
 Other States includes California, Idaho, Iowa, Kansas, Nebraska, New Jersey, Oklahoma, Oregon, Tennessee, Virginia, and Wyoming.

Table 234.—Peas, canned: Pack 1 in the United States, 1922-34

						1	Season						
State			<u> </u>					l	ı	1	i I		
	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	cases	cases	cases	cases	cases	cases	cases	cases	cases	cases	cases	cases	cases
New York	2, 137	2,541		2, 385	2,624							1,279	1, 124
New Jersey 2	153	199		257	143	267	242	383		298		3 220	384
Ohio	225	384	430	232	278	205	336	337	208	398	131	140	
Indiana	268	367	483	86	500	90	427	404	564	711	412		262
Illinois	516	586	697		680			767	1,560				184
Michigan	455	392			723	399		558		434		(4)	644
Wisconsin	7,042					6, 549			10, 492				6, 743
Minnesota	(4)	254					722			617			
Maryland	489	591	873						400	1, 243			
Utah	751	918				802							1,657
California	496		900	1,040									1,311
		239			222		(4)	(4)	(4)	(1)	(4)	(4)	(4)
Other States	510	516	888	1,040	937	910	1,403	1,363	1,698	1,063	1,366	2,488	2,749
United States	13, 042	13, 948	19, 315	17, 816	17, 709	12, 936	17, 943	18, 530	22, 035	13, 286	10, 367	12, 893	15, 742

¹ Stated in cases of 24 No. 2 cans.

Bureau of Agricultural Economics; compiled from National Canners Association, 1922-26 and 1934; Bureau of the Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce, 1930-33.

Table 235.—Pecans: Production and price per pound received by producers Dec. 1, by States, average 1927-31, and annual 1933 and 1934

		Production										Price, Dec. 1 for—					
State	Impro	ved va	rieties	Seedl	ing va	rieties		Total		Impr vari	oved eties		lling eties	All v			
	A ver- age 1927- 31	1933	1934 1	A ver- age 1927- 31	1933	19341	Aver- age 1927- 31	1933	19341	1933	1934	1933	1934	1933	1934		
III	1,000 lb. 0 14 481 620 5,708 1,166 2,190 2,294 93 741 67 560	5, 860 1, 080 2, 650 2, 475 120 1, 050 95 720	824 5, 673 800 1, 870 975 80 328 102 390	260 166 634 363 432 2,346 1,617 4,109 11,273 20,160	1, 328 300 180 440 270 350 2, 025 2, 040 5, 950 9, 405 23, 280	490 300 146 427 200 230 975 1, 270 1, 842 10, 148 12, 610	800 741 786 6,340 1,529 2,622 4,640 1,710 4,850 11,340 20,720	1, 350 700 1, 200 6, 300 1, 350 3, 000 4, 500 2, 160 7, 000 9, 500 24, 000	500 750 970 6, 100 1, 000 2, 100 1, 950 1, 350 2, 170 10, 250 13, 000	13. 0 19. 0 15. 0 12. 0 12. 5 14. 5 10. 5 15. 0	20. 0 17. 5 13. 8 15. 0 15. 0 19. 0 18. 0 17. 0 21. 0	12. 5 10. 0 6. 0 7. 0 7. 5 6. 5 5. 4	12. 5 16. 0 12. 2 8. 6 9. 6 9. 5 13. 0 9. 0 11. 0	7. 1 16. 3 14. 2 11. 6 11. 0 14. 1 10. 2 6. 9 6. 7 5. 5	16.7 13.4 13.9 14.4 16.0 9.5 11.9		
U. S	13, 932	15, 492	11, 502	42, 289	45, 7 18	28, 823	56, 222	61, 210	40, 325	13. 0	15.4	6.0	11.2	7.8	12.4		

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

² Included in "Other States."

Included in "Other States."

Includes Idaho.

Table 236.—Peppers, commercial crop for market: Acreage, production, and season average price per bushel received by producers, average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price for crop of —			
Marketing season	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	
Fall Early Second early Intermediate Late	Acres 2, 200 5, 440 1, 950 6, 350 850	Acres 2,000 6,900 1,640 6,000 1,050	Acres 1,750 4,800 1,650 5,800 1,200	1,000 bushels 1 455 1,397 297 1,503 244	1,860 294 1,356 343	1,000 bushels 1 519 1,026 238 1,285 431	Dollars 1. 67 1. 35 . 83 . 51 . 82	Dollars 1.11 .47 .56 .30 .50	Dollars 1, 29 1, 10 63 40 67	
Total	16, 790	17, 590	15, 200	3, 896	4, 227	3, 499	.93	. 48	.78	

¹ Bushels containing approximately 25 pounds.

Bureau of Agricultural Economics: estimates based on returns from crop reporters.

Table 237.—Plums and prunes: Production and average price per ton received by producers, by States, average 1927-31, and annual 1933 and 1934

		Production		Price for	crop of—
Crop and State	Average, 1927-31	1933	1934 1	1933	1934 1
Fresh basis: Plums and prunes, fresh: California	Short tons 2 62,000 6,026 21,960 16,455 23,680	Short tons 2 57, 000 5, 320 5, 000 15, 795 28, 000 2 111, 115	Short tons 61, 000 6, 830 10, 100 17, 900 38, 000	Dollars 24, 35 34, 00 18, 00 17, 00 17, 00	Dollars 32. 60 36. 00 18. 00 17. 00 17. 00
Dry basis: Prunes, dried; 4 California Oregon	² 207, 260 ² 24, 700 3, 881 ² 235, 841	182, 000 15, 000 1, 850 198, 850	170, 000 28, 000 4, 200 202, 200	80. 00 70. 00 74. 00 79. 19	80. 00 85. 00 82. 00 80. 73

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

² Includes some quantities not harvested on account of market conditions as follows: Plums, California, 7,000 tons in 1931 and 7,000 in 1933; prunes, dried, California, 13,000 tons in 1930; Oregon, 8,000 tons in 1930. Prices and value are computed on the harvested crop.

3 Plums.

⁴ To convert California estimates to fresh-fruit basis, multiply by 2½. In the other States, the ratio ranges from 3 to 4 fresh to 1 dried.

TABLE 238.—Potatoes: Acreage, production, value, and foreign trade, United States. 1919-34

	Acreage	Average		Price per bushel	Farm value.	Whole- sale	Foreign	trade, ye ning July	ear begin-
Year	har- vested	yield per acre	Produc- tion	received by pro- ducers, Dec. 1	basis Dec. 1 price	price per bushel at New York ²	Domes- tic ex- ports ³	Im- ports 3	Net bal- ance 3 4
1919	1,000 acres 3,252	Bushels 89. 3	1,000 bushels 290, 428	Cents	1,000 dollars	Cents	1,000 bushels	1,000 bushels	1,000 bushels
1919 1920 1921 1922 1923	3, 300 3, 301 3, 598 3, 946 3, 378	90. 1 111. 8 90. 4 106. 3 108. 5	297, 341 368, 904 325, 312 419, 288 366, 356 \$52, 462	191. 1 133. 2 113. 5 68. 6 91. 5	568, 259 491, 561 369, 109 287, 792 335, 310	284 103 123 97 118	3, 723 4, 803 2, 327 2, 980 3, 075	6, 941 3, 423 2, 110 572 564	-3, 212 +1, 399 +222 +2, 408 +2, 512
1924 1924 1925 1926 1927 1928	2, 911 3, 110 2, 819 2, 813 3, 166 3, 469	123. 7 105. 6 114. 6 116. 5 122. 7	384, 837 297, 567 322, 350 368, 813 425, 626 822, 416	71. 5 166. 3 136. 3 108. 9 57. 2	274, 972 494, 765 439, 469 401, 788 243, 542	78 238 161 129 76	3, 653 1, 824 2, 092 2, 424 3, 165	478 5, 420 6, 349 3, 803 2, 698	+3, 187 -3, 575 -4, 205 -1, 313 +528
1929 1929 1930 1931 1932 1933	3, 030 3, 366 3, 379	110. 2 109. 8 110. 8 110. 8 105. 9 100. 3 116. 6	327, 652 332, 693 372, 994 357, 871 320, 203 385, 287	131. 5 91. 5 46. 4 39. 5 82. 3 51. 7	430, 950 304, 558 173, 100 141, 328 263, 680 199, 251	163 111 61 61 113	2, 386 1, 548 816 973 721	6, 006 5, 729 1, 493 440 2, 102	-3, 521 -4, 155 -585 +534 -1, 381

1 Beginning with 1919 prices are weighted average prices for crop-marketing season.
2 Compiled from Producers Price Current. Prices in 1919 are averages of the high and low weekly quotations of New York potatoes, October-June, converted from dollars per 180 pounds to cents per bushel; beginning 1920, season September-May.
3 Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26, January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.
4 The difference between total exports (domestic exports plus reexports) and total imports; beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.) + indicates net exports and - indicates net imports.

5 Proliminary 5 Preliminary.

Bureau of Agricultural Economics.

Acreage, yield, and production figures are estimates of the Crop Reporting Board, revised, 1919–28. See introductory text. Italic figures are census returns. Prices received by producers are based upon returns from crop reporters.

Table 239.—Potatoes: ¹ Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acren	ge harv	ested	Yie	ld per a	cre	Pı	oductio	on	Pric erop	
State and group	Aver- age, 1927-31	1933	1934 2	A ver- age, 1922-31	1933	1934 2	Aver- age, 1927-31	1933	1934 2	1933	1934 2
Surplus late potato States: Maine New York Pennsylvania	1,000 acres 173 215 197	1,000 acres 150 200 189	1,000 acres 168 210 200	Bu. 251 117 119	Bu. 280 123 113	Bu. 335 155 170	1,000 bu. 43, 208 25, 386 22, 764	1,000 bu. 42,000 24,600 21,357	32, 550		Cents 24 49 55
Total	584	539	578	149. 6	163. 2	212, 5	91, 358	87, 957	122, 830	89. 2	39. 2
Michigan Wisconsin Minnesota North Dakota South Dakota	247 250 344 111 57	265 239 334 150 62		103 94 79	78 70 68 62 40	128 120 70 45 30	21, 511 23, 553 30, 400 8, 685 4, 420	22, 712 9, 300	31, 320 23, 380 5, 940	70 61 60	37 44 43 53 84
Total	1,010	1,050	1,038	94. 8	68. 5	92, 7	88, 569	71, 892	96, 234	66.9	42. 4
Nebraska Montana Idaho Wyoming	110 21 99 22	23 95	23 104	104 200	75 85 230 100	30 70 185 40	9, 404 2, 195 21, 388 2, 521	1, 955	1, 610 19, 240	65 52	88 75 45 81

See footnotes at end of table.

Table 239.—Potatoes: 1 Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934—Continued

Continued							T				
	Acrea	ge harv	ested	Yie	ld per a	ıcre	P	roducti	on.	Pric crop	e for— of—
State and group	Aver- age, 1927–31	1933	1934 2	Aver- age, 1922-31	1933	1934 2	Aver- age, 1927-31	1933	1934 2	1933	1934 2
Colorado	1,000 acres 99 13 4 50 38 41	1,000 acres 87 14 2 41 39 33	1,000 acres 76 13 2 45 44 41	154 144 166	Bu. 150 150 125 180 160 240	Bu. 75 80 105 162 130 210	1,000 bu. 15,150 2,010 569 8,567 4,757 7,593	2, 100 250 7, 380 6, 240	1,040 210 7,290 5,720	Cents 61 77 70 68 61 83	Cents 58 55 58 58 53 55 56
Total	498	480	488	142.7	151. 0	110. 4	74, 155	72, 470	53, 870	63. 4	54.8
Total, surplus late.	2, 092	2, 069	2, 104	121. 4	112. 3	129. 7	254, 081	232, 319	272, 934	74. 3	43.4
Other late potato States: New Hampshire Vermont Massachusetts Rhode Island Connecticut	9 16 13 2 12	8 15 15 2 13	9 16 16 3 15	118 132	180 130 155 185 160	185 170 160 180 175	1, 332 2, 238 1, 420 271 1, 536	1, 440 1, 950 2, 325 370 2, 080	2,720	145	61 50 68 73 65
Total	52	53	59	126. 6	154. 1	171.4	6, 797	8, 165	10, 110	119.3	61.5
West Virginia Ohio Indiana Illinois Iowa	37 110 52 49 74	37 112 57 48 75	40 109 62 52 77	95 94 89 85 89	63 72 56 33 68	78 105 100 52 63	3, 522 10, 615 4, 801 4, 362 6, 544	2, 331 8, 064 3, 192 1, 584 5, 100	3, 120 11, 445 6, 200 2, 704 4, 851	110 112 99 128 105	88 72 59 95 84
Total	323	329	340	90.9	61. 6	83. 3	29, 844	20, 271	28, 320	109.2	75.2
New Mexico Arizona	4 3	8 3	7	64 72	80 80	70 60	312 244	640 240	490 180	131 108	95 104
Total	7	11	10	68. 5	80. 0	67. 0	556	880	670	124. 7	97. 5
Total other late	382	393	409	95. 7	74. 6	95. 6	37, 197	29, 316	39, 100	112. 5	72.0
30 late States	2, 474	2, 462	2, 513	117. 3	106.3	124. 2	291, 279	261, 635	312, 034	78. 5	47.0
Intermediate potato											
States: New Jersey Delaware Maryland Virginia Kentucky Missouri Kansas	42 5 32 113 51 52 46	44 6 30 93 62 54 42	50 6 33 101 64 46 37	151 87 104 127 84 86 95	164 74 95 93 66 52 58	181 120 99 133 70 30 40	7, 081 430 3, 646 15, 989 4, 365 4, 867 4, 988	7, 216 444 2, 850 8, 649 4, 092 2, 808 2, 436	3, 267 13, 433 4, 480	137 101 104 99 103 107 114	54 60 54 60 80 90 83
Total	340	331	337	111. 2	86. 1	100.3	41,366	28, 495	33, 810	111.8	62.7
37 late and inter- mediate States	2, 814	2, 793	2, 850	116. 5	103. 9	121. 3	332, 645	290, 130	345, 844	81.8	48. 5
Early potato States: North Carolina. South Carolina. Georgia. Florida. Tennessee. Alabama. Mississippi. Arkansas Louisiana. Oklahoma. Texas.	74 23 14 29 44 29 10 34 37 43 50	77 16 18 18 54 32 13 39 41 36 57	92 21 20 25 60 40 16 41 44 40 54	98 125 65 109 72 78 72 75 61 74 68	95 109 57 124 66 72 62 67 57 69 64	116 125 68 130 72 94 84 67 69 70	7, 573 2, 944 954 3, 192 3, 178 2, 350 2, 356 3, 235 3, 602	7, 315 1, 744 1, 026 2, 232 3, 564 2, 304 2, 337 2, 484 3, 648	10, 672 2, 625 1, 360 3, 250 4, 320 3, 760 1, 344 2, 948 2, 760 3, 780	87 90 96 100 94 68 91 86 76 95 86	64 89 97 114 87 82 82 54 73 64 105
Total	386	401	453	82. 5	75. 0	87.1	32, 911	30, 073	39, 443	87. 5	79.7
United States	3, 201	3, 194	3, 303	112, 9	100. 3	116. 6	365, 556	320, 203	385, 287	82, 3	51.7

Acreage and production estimates for each State cover the entire crop, whether commercial or non-commercial, early or late.
 Preliminary.
 Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 240.—Potatoes, early commercial crop: Acreage, production, and season average price per bushel received by producers, by States; average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price	e for crop	of—
Group and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Fall: Texas	Acres 2, 400	Acres 2, 400	Acres 2, 600	1,000 bushels ¹ 134	1,000 bushels ¹ 96	1,000 bushels ¹ 122	Dollars 1.21	Dollars . 63	Dollars . 95
Early (sec. 1): Florida	26, 500	17, 000	23, 500	2, 796	2, 163	3, 128	1.50	. 85	1. 13
SouthNorth	4, 860 21, 640	2, 500 14, 500	6, 000 17, 500	353 2, 443	288 1, 875	840 2, 288	1.98 1.43	.90 .84	1. 20 1. 10
Hastings La Crosse West	18, 680 2, 360 600	12, 500 1, 500 500	14, 500 2, 200 800	2, 108 264 71	1, 625 188 62	1, 958 242 88	1. 46 1. 29 1. 06	.86 .84 .40	1. 10 1. 10 1. 10
Texas, lower Rio Grande Valley	11, 880	10, 300	6, 600	1,032	855	772	1.54	. 94	1. 20
Total	38, 380	27, 300	30, 100	3, 828	3, 018	3, 900	1.50	.88	1.14
Early (sec. 2): Alabama. California. Georgia. Louisiana. Mississippi. South Carolina Texas, other	12, 320 14, 380 1, 940 21, 200 1, 200 16, 360 14, 940	8, 000 12, 600 800 20, 000 1, 100 7, 000 12, 400	13, 200 16, 000 2, 000 23, 000 2, 000 12, 000 12, 400	1, 249 2, 226 264 1, 541 109 2, 294 1, 174	944 2, 545 140 1, 360 77 1, 155 887	1, 901 3, 456 250 1, 840 240 1, 980 982	. 97 . 91 1. 00 1. 01 1. 05 . 90 . 92	.65 .93 .80 .72 .75 .70	. 54 . 52 . 66 . 50 . 48 . 60 . 64
Eagle Lake-Sugar- land-Wharton Other counties	10, 140 4, 800	7, 500 4, 900	6, 000 6, 400	763 411	495 392	432 550	. 97 . 83	. 70 . 63	. 64 . 64
Total	82, 340	61, 900	80, 600	8,857	7, 108	10, 649	. 93	. 78	. 55
Second early: Arkansas. North Carolina. Okiahoma Tennessee.	4, 680 32, 480 11, 520 1, 780	5, 000 27, 500 7, 000 2, 100	6,000 39,000 10,000 2,800	426 4,595 1,143 145	450 4,070 679 189	432 6, 474 1, 000 238	. 72 . 80 . 68 . 83	.87 .77 .88 1.05	. 45 . 50 . 46 . 75
Total	50, 460	41, 600	57, 800	6, 309	5, 388	8, 144	. 77	. 80	. 50
Intermediate (sec. 1): Kansas	16, 500	13, 500	13, 250	2, 585	1, 286	787	. 56	1.31	. 52
Kaw Valley Scott County	15, 520 980	12,850 650	12, 500 750	2, 395 190	1, 156 130	712 75	. 54 . 72	1.30 1.45	. 50 . 70
Kentucky Maryland Missouri Virginia	5, 020 9, 420 5, 500 74, 180	4, 500 6, 100 6, 600 53, 000	5, 000 6, 700 7, 300 63, 000	596 1,341 955 11,536	369 732 792 5, 831	300 871 292 10, 012	.71 .67 .65 .73	1. 3 0 1. 40 1. 40 1. 21	. 50 . 35 . 45 . 44
Norfolk district Eastern Shore Other	11, 140 58, 820 4, 220	7, 700 42, 400 2, 900	8,600 51,000 3,400	1,656 9,301 579	1,001 4,494 336	1, 376 8, 160 476	. 74 . 74 . 67	1. 10 1. 25 1. 05	. 47 . 44 . 40
Total	110, 620	83, 700	95, 250	17,013	9, 010	12, 262	. 69	1. 26	. 44
Intermediate (sec. 2): Nebraska New Jersey	1, 780 32, 200	1, 700 34, 000	2, 000 39, 400	354 5, 632	391 5, 780	430 7, 289	. 75	1. 30 1. 23	. 55
Total	33, 980	35, 700	41, 400	5, 986	6, 171	7, 719	,80	1. 23	. 50
Grant total	318, 180	252, 600	307, 750	42, 127	30, 791	42, 796	. 84	1.02	. 56

¹ Bushels containing approximately 60 pounds.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 241.—Potatoes: Acreage, yield per acre, and production, specified countries, average 1925–26 to 1929–30, annual 1933–34 and 1934–35

		Acreag	e	Yi	eld per	acre		Production	
Country	Aver- age 1925–26 to 1929–30	1	1934-351	Aver-	_		A verage 1925–26 to 1929–30	1933-34	1934–351
NORTHERN HEMISPHERE	1,000	1,000	1,000				1,000	1,000	1,000
North America:	acres 552	астев	acres	Bu.	Bu.	Bu.	bushels	bushels	1,000 bushels
Canada United States	3, 048	528 3, 194	569 3, 303	135. 1 114. 3	134. 9 100. 3	141. 2 116. 6	74, 579 348, 402	71, 242 320, 203	80, 320 385, 287
Total	3, 600	3, 722	3,872	117. 5	105. 2	120. 2	422, 981	391, 445	465, 607
Europe: United Kingdom Irish Free State. Norway. Sweden. Denmark. Netherlands. Belgium France. Spain. Italy Switzerland. Germany. Austria. Czechoslovakia. Hungary. Yugoslavia. Rumania. Poland. Lithuania. Latvia. Estonia. Finland. Union of Soviet Socialist Republics.	3, 606 2 812 868 117 6, 945 453 1, 738 652 560 644	811 341 120 327 190 380 404 3,436 976 985 117 7,138 504 1,819 726 615 706 6,770 441 267 199	765 339 120 327 327 189 351 393 3, 441 	248. 1 238. 1 238. 3 173. 2 209. 5 280. 0 305. 4 145. 3 2 172. 0 83. 9 219. 6 201. 7 178. 4 110. 8 74. 9 117. 8 158. 1 142. 4 158. 9	253. 4 273. 6 299. 1 222. 2 225. 6 295. 3 335. 3 161. 5 88. 6 261. 2 226. 9 171. 7 165. 7 93. 9 86. 8 78. 2 153. 8 152. 0 200. 5 206. 7	254. 6 178. 7 280. 7 297. 2 164. 3 100. 6 256. 0 239. 4 203. 0 154. 9 114. 5 168. 8 210. 2 199. 7 168. 9 180. 2	198, 501 87, 856 31, 892 63, 892 736, 243 121, 249 124, 885 523, 939 1 139, 671 25, 691 1, 400, 991 83, 216 310, 025 72, 221 41, 930 75, 865 972, 152 58, 811 28, 477 26, 245 27, 522 1, 602, 822	205, 469 93, 228 35, 590 72, 680 48, 762 112, 196 135, 558 544, 064 157, 630 87, 232 30, 663 1, 619, 331 86, 527 301, 873 301, 873 301, 873 55, 183 55, 183 1, 040, 941 67, 035 51, 535 34, 689 47, 096	30, 556 88, 422 91, 490 116, 798 566, 662 99, 451 17, 18, 865 102, 712 286, 297 1, 167, 253 95, 009 53, 123 29, 891 38, 213
Total European countries reporting area and production, all years Estimated European total, excluding Union of Soviet Socialist Republics Total Northern Hemisphere countries reporting area and production, all years.		27,600	24, 007 27, 800 27, 879	173. 4 165. 7	182. 2 171. 8		4, 532, 000	4, 335, 053 4, 986, 000 4, 726, 498	
Hemisphere total excluding Union of Soviet Socialist Republics and China.	30, 700	32, 300	32, 600				5, 030, 000	5, 463, 000	5, 766, 000
SOUTHERN HEMISPHERE									
Chile Argentina Australia	93 345 140	132 341	133	145. 8 85. 0 95. 1	133. 2 99. 1	168, 9	13, 557 29, 325 13, 315	17, 576 33, 778	22, 461
Estimated Southern Hemisphere total	2, 000	2, 400					112, 000		
Estimated world total excluding Union of Soviet Socialist Re- publics and China	32, 700	34, 700					5, 142, 000	5, 612, 000	

¹ Preliminary. ² 4-year average.

Bureau of Agricultural Economics. Both acreage and production figures refer to the year of harvest. Harvests of the Northern Hemisphere are combined with those of the Southern Hemisphere which immediately follow; thus, for 1933-34 the crop harvested in the Northern Hemisphere countries in 1933 is combined with the Southern Hemisphere harvest which begins late in 1933 and ends early in 1934.

TABLE 242.—Potatoes: Production of certified seed, by States, average 1925-34, annual 1925-34

					<u> </u>	1		<u> </u>			1
State	Aver- age 1925-34	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
	4 000	4 000	4 000	1.000	+ 000	* 000	1 000	1 000	1 000	4 000	4 000
	1,000 bushels	1,000	1,000 bushels	1,000	1,000	1,000 bushels	1,000 bushels	1,000	1,000	1,000	1,000 bushels
California	12	12	12	18	12	12	4	8	7	12	
California Colorado	147	28	31	77	58	72	52	96	123	506	21 425
Idaho	311	278	371	866	350	204	315	226	151	212	
Kentucky	14	15	23	25	930	204	313	220	12	12	137
Maine	3,635	2, 226	2, 295	3, 278	5,094	3, 990	2,741	3,944	2,921	3,853	9 000
Maine Maryland	43	2, 220	2, 293 18	32	22	40	17	66	57	73	6,003
Maryland	371	215	337	162	855	741	212	194	371	272	95
Michigan	689	596	694	622	1, 163	911	548	662	437	602	349
Minnesota		68		181		72	69	62	64		659
Montana	317		113		237	463	663	384	392	61 552	68
Nebraska		121	60	182	152 17	9	35	40	13	30	196
New Hampshire	79	12 58	3	15		62	50	114	84		35
New Jersey			93	(2)	101		716	819	550	124	107
New York	492	211	225	323	470	572				520	513
North Dakota	478	171	182	321	540	412	372	413	825	918	628
OhioOregon	6	4	6	6	6		5 74	137	100	. 8	(2)
Oregon.	122	28	46	88	154	137			188	185	187
Pennsylvania	84	26	41	30	60	70	46	91	103	137	241
South Dakota	34	24	29	50	59	63	23	38	40	4	7
Vermont	172	109	160	253	136	137	133	219	179	183	210
Washington	82	17	30	121	82	77	85	115	93	102	101
Wisconsin	237	163	197	243	448	294	261	259	173	150	180
Wyoming	202	21	138	260	350	185	300	187	131	304	143
Total	7, 648	4, 411	5, 104	7, 153	10, 375	8, 560	6, 730	8,089	6, 921	8, 820	10, 314

Bureau of Agricultural Economics. Compiled from reports of State seed-potato certifying agencies.

Table 243.—Potatoes: Car-lot shipments, United States, by months, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1925 1926 1927 1928 1929 1930 1931 1932 1933	Cars 21, 715 16, 185 17, 974 20, 278 20, 096 20, 302 21, 241 17, 767 16, 745 21, 924	14, 834 17, 784 22, 913 20, 472 19, 918 20, 321 18, 923 16, 518	19, 974 21, 497 23, 710 23, 059 22, 108 23, 888 24, 876 24, 535	14, 238 20, 283 17, 255 20, 153 19, 769 21, 461 21, 436 18, 206	16, 903 16, 691 23, 740 20, 360 22, 803 24, 080 18, 385 18, 203	23, 587 22, 155 29, 675 24, 813 25, 004 27, 276 22, 095 21, 380	20, 310 21, 053 21, 048 19, 583 22, 326 20, 434 15, 932 12, 016	15, 327 17, 853 16, 252 17, 395 16, 775 12, 015 8, 465 10, 797	22, 978 25, 003 21, 127 24, 441 22, 415 17, 715	36, 182 38, 333 29, 906 31, 958 29, 076 24, 759 14, 496 21, 942	18, 419 21, 124 18, 232 15, 706 16, 502 14, 510 11, 941 13, 824	13, 487 13, 695 13, 207 15, 158 15, 413 13, 303 12, 118 12, 441	Cars 241, 523 232, 424 253, 445 257, 343 253, 194 252, 411 241, 003 199, 358 204, 082 223, 216

¹ Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis, 400 to 700 bushels to a carload. Shipments by truck not included. Data for earlier years in 1928 Yearbook, table 208.

¹ Preliminary.
2 Less than 500 bushels.

Table 244.—Potatoes: Car-lot shipments, by State of origin, 1924-33

Gt. d.				Cro	p-mover	nent seas	son 1			
State	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933 2
Maine New Hampshire	Cars 43, 145 67	Cars 38, 830 105	Cars 42, 607 130	Cars 40, 945 163	Cars 41, 111 118	Cars 61, 404 119	Cars 53, 381 268	Cars 53, 224 71	Cars 44, 043 19	Cars 48, 756 22
Vermont New York New Jersey Pennsylvania	20, 123	144 11, 598 3, 355 6, 027	247 12,573 4,750 2,630	223 12, 320 6, 676 3, 375	145 13,478 5,367 5,829	9, 208 3, 811 2, 132	503 13, 712 6, 600 600	224 10, 409 5, 179	97 8,058 3,171 194	70 7, 153 5, 540
Ohio Indiana Illinois	66 50 270	617 398 151	265 163 112	339 128 14	296 191 94	493 118 32	264 49 54	634 144 12 76	94 20 55	573 36 1 9
Michigan Wisconsin Minnesota	17, 450 16, 031 31, 695	14, 201 16, 025 23, 163	16, 455 18, 153 25, 049	8, 568 15, 455 33, 482	14, 189 15, 850 20, 456	6, 337 14, 709 22, 923	3, 379 10, 484 16, 346	8,856 13,351 19,209	9,946 9,630 14,362	5, 129 5, 218 17, 123
Missouri North Dakota	554 1, 194 6 063	220 919 4,810	92 1,616 4,815	149 1, 294 7, 933	427 2,362 6,333	674 984 6,026	342 2,016 4,687	171 1,473 7,277	367 2,365 4,526	659 1, 599 8, 390
South Dakota Nebraska Kansas Delaware		1,024 4,342 2,735 30	518 3, 228 4, 062 52	2,537 6,039 4,341 214	1,403 4,784 4,848 27	2, 144 7, 212 2, 440 54	749 9, 160 3, 856 8	8, 307 2, 710 24	1,330 4,294 3,124	552 9, 316 1, 657 66
Maryland Virginia West Virginia North Carolina	2, 679 23, 608 88	1, 512 15, 882 88	2,031 16,212 119	3, 545 23, 717 177	3, 123 27, 679 360	2, 426 21, 177 412	2, 240 21, 731 87	1,752 18,644 165	1, 616 12, 823 138	1, 147 9, 826 23
		4,040 3,674 255	6, 713 5, 223 373	7, 555 3, 943 489	9,736 4,706 321	6, 003 3, 809 272	7, 355 4, 544 576	8, 681 5, 030 808	5, 876 1, 666 247	7, 044 2, 009 239
Georgia_ Florida_ Kentucky_ Tennessee_ Alabama_	4, 382 1, 593 223	5, 137 735 249	4,809 430 313	5, 410 877 276	7,744 718 436	5, 069 1, 211 272	4,802 518 267	6, 892 447 128	2,584 501 119	4, 035 335 344
Mississippi Arkansas Louisiana	202	1, 046 30 537 1, 280	2, 222 38 526 1, 429	2, 102 68 508 1, 298	3, 133 147 239 1, 727	1, 541 114 514 1, 102	2, 728 119 814 2, 327	4,712 368 837 4,410	1,874 188 483 1,656	2, 154 131 683 2, 102
Oklahoma Texas Montana	1, 262 1, 422 420	2,335 1,431 1,509	2, 164 2, 014 888	2, 130 3, 031 1, 376	2, 058 3, 468 755	2, 208 2, 769 380	2, 755 5, 480 537	2, 171 5, 045 393	1,893 3,504 222	1, 366 2, 354 369
Idaho	11, 942 652	18, 271 998 15, 422	17, 329 763 14, 200	28, 305 2, 021 17, 328	18,887 1,385 13,714	19, 011 1, 731 15, 366	32,903 2,775 18,080	25, 916 2, 142 7, 529	22, 526 821 7, 266	30, 066 2, 436 12, 395
liteh	1 727	1,162 719	1,078 780	954 942	75 454 595	939 442	1,044 593	954 248	70 613 223	73 723 201
Nevada	6, 654 927 6, 492	8,880 1,494 6,159 55	9,842 2,719 7,184 48	9, 602 2, 339 7, 904 56	8, 054 1, 653 7, 606 23	8, 097 1, 560 7, 769 58	7, 988 2, 881 7, 887	6, 993 3, 068 6, 959 21	4,996 2,515 5,742 95	5, 920 4, 110 8, 757 50
Total			237, 028						185, 965	210, 761

¹ Crop-movement season covers 19 months, from December through the second following June; i. e., the 1924 season begins in December 1923 and ends June 1925.

² Preliminary beginning January 1934.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis, 400 to 700 bushels to a car-load. Shipments by truck not included.

Table 245.—Potatoes: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept. 15	Oet. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1925-20 1926-27 1927-23 1928-29 1928-30 1930-31 1931-82 1932-33 1933-34 1934-35	Cents 125.5 174.6 183.1 77.4 87.7 129.4 82.5 48.8 97.9 66.9	155. 4 140. 5 146. 3 71. 9 139. 1 108. 8 76. 7 51. 4 131. 0	121. 1 130. 6 107. 4 64. 8 136. 0 109. 9 60. 1 38. 0 100. 8	125. 6 126. 4 97. 9 58. 0 138. 2 101. 4 45. 8 34. 4 74. 9	141. 3 95. 4 56. 9 134. 8 95. 0 45. 3 34. 4 68. 8	94. 1 57. 7 135. 3 89. 8 45. 7 36. 8 69. 4	220. 5 139. 1 93. 6 58. 9 137. 8 90. 3 47. 1 37. 4	226. 0 134. 1 96. 2 59. 5 139. 1 86. 7 44. 8 37. 0	225. 0 127. 0 113. 1 58. 4 136. 3 84. 9 45. 7	126. 8 116. 8 55. 3 145. 8 90. 8 46. 4 42. 4	244.8 145.0 103.3 59.3 149.9 87.0 47.0	191. 0 83. 6 64. 0 148. 6 75. 3	108.9 57.2 131.5

¹ Preliminary

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 210. Only monthly prices are comparable.

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TABLE 246.—Potatoes: Average price per 100 pounds to jobbers, New York and Chicago, 1919-20 to 1984-35 NEW YORK, LESS-THAN-CAR-LOT PRICE TO JORRERS

		-																
Season	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
				\$6.25	\$4.29	\$4.37	\$3.43	\$3.39	\$2.79	\$2.57	\$2.63	\$3.09	\$4.23	\$4.49	\$5.49	\$7.58	\$7.19	
20-21	4				85	88	z. 2	88	:83		98.	-1.8	88	 E.S.	12.0	83	-	
922-23					3 52	38	3 28	3 25	1.6	3 8	22.	38	3 6	3 4	24 E	28	78	1 \$1. 52
923-24	-		<u> </u>		4, 13	80.5	3.08	2. 57	1.49	1.85	1.67	1.59	1.98	2, 01	1.98	12	22	
924-25	-				4.12	25.02	36.5	4.5	1.37		228	28	1.46	1.56	1.21	1.20	1.36	1.35
-	1 1		00° 00		200	3 20	28	4 64	2.5	3 6	98	25.5	58	2.48	2.45	46.0	9 6	9. 4 8. 8
1			17.08		35.50	8	66	83	12.	200	88	2,17	2	2, 64	5.3	88	1.94	
920-30			_i	4, 32	3, 23	. 2. 2. 3. 3. 3. 3.	- 78 - 86 - 86 - 86	3.24	-: % 8 %	3,14	::: 88:	3.5	3.14	c.	5 :-	. 66 86 86 86 86 86 86 86 86 86 86 86 86 8	2.74	1.32
930-31	-				4.15	2.80	1.7	1.61	2,03	1.9	1.78	2,03	2, 13	2.03	2,01	2,05	1.81	
931-32 932-33			3.01		2.4	1.20		1.22	5.8	8.8	48	1.13	1.13	===	1.14	1,13	15	. 89
		8.	2,94		2,0	1.97	2,73	2,30	7.7	1.84	1.67	1.80	2.08	2.32	2,34	2,03	1.62	1.24
934-35	23. 58	mi —	3,25		2.66	1.48	- 36		3.1.00	26.	8	33.						

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1019-20 1019				12	-	-	-1	ci	co	Ä	٠				-			
CHICAGO, CAR-LOT SALES PRICE TO JOBBERS CHICAGO, CAR-LOT SALES PRICE TO JOBBERS Separate Se		_	_	-	_	1.27	1.16	3.09	3, 18	1.40	8.	2.76	1.29	82	7.	1.23		
CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JAMES TO SALE T		\$6.97	86	I. 64	1.27	1.32	.84	4.51	2, 11	1.85	17.	2.87	1.66	06.	83	1, 47		
CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGQ, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JOBBERS CHIOAGG, CAR-LOT SALES PRICE TO JAMES TO SALE T		\$5,47	1.25	1.77	1.17	1,36	1,09	4.01	1.96	2, 17	.85	2,44	1.59	66.	. 93	1.72		
OHIOAGO, CAR-LOT BALES PRICE TO JOBBERS 10,06 84,08 85,08 85,09 85,17 10,06 84,08 85,09 85,17 10,06 84,09 85,17 10,06 84,09 85,17 10,06 84,09 84,18 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,09 84,19 10,06 84,		\$4, 33	1, 15	1.89	96.	1,34	1, 11	3.74	1.98	1.78	1.00	2, 49	1.50	.94	8.	2.03		
CHICAGO, CAR-LOT SALES PRICE TO JOBBERS CHICAGO, CAR-LOT SALES PRICE TO JOBBERS S. 10.06 8.02 8.1 8.5 99 \$2.73 \$2.90 \$3.1 8.5 99 \$2.73 \$2.90 \$3.1 8.5 99 \$3.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 8.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.2 9.1 9.1 9.2 9.1 9.1 9.2 9.1 9.1 9.2 9.1 9.1 9.2 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1		\$4,47	1.25	1,98	.91	1.40	1, 13	4,03	2, 28	1.52	1.00	2, 57	1,63	86.	88.	1.87	1	
OHIOAGO, CAR-LOTT BALES PRICE TO JOBBE 18, 18, 18, 18, 18, 18, 18, 18, 18, 18,		\$3,17	1.61	1.80	88.	1.06	1.20	3.65	2,23	1.63	. 92	2.34	1, 55	1.02	88.	1.37	1.20	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	BERS	\$2,90	2,00	1.62	88.	86.	86.	3, 45	2, 41	1.53	88.	2, 31	1.62	.92	92.	1,30	1, 28	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	o JOB.	\$2.40	1.85	1,98	1.89	1.06	96	2.66	2, 47	1.53	. 91	2.40	1.77	8.	89.	1.31	1.30	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	RICE 7	\$2.73	2.41	2,64	1. 18	1, 69	1.32	1.99	2, 45	1.70	7.04	2.49	2, 10	1.05	62.	1,71	1.37	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	LES P	\$3.99	3.43	2.16	1.64	2.18	1.39	2.68	2.22	5 5 7	1.06	2, 43	1.89	1.45	.77	2, 65	1.54	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	LOT 8	\$4, 18	6.40	2,46	2, 21	2,78	1.80	3, 21	2,35	2, 30	1.16	2, 78	1.82	1.58	1.14	3.04	1. 45	
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2), CAR-	\$4.33	8.62	2, 41	3, 11	3, 21	2, 51	2, 96	3,91	4, 65	1.74	2.71	3.01	1, 56	1.47	2, 24	1. 57	-
2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	TOAGG	\$5.32	3 10, 05	3,35	33.80	\$ 5,05	2.88	3, 42	3 6. 57	4.48	3, 10	4.04	3.57	2,30	3, 16	1.92	2.24	-
\$4.88 3 \$5.98 3 6.46 3 13.67	OI	3\$8.											4.48	34.45	83.48	33.00	\$ 3, 24	
88.				ì			1	3 \$8. 24		37.61	87.28		\$ 5.87	8 4, 73	\$ 3. 78	3 3, 42	3 3, 53	
88.					1		1						3 6. 46	1	1	3 1 3, 57	313.66	
1919-20 1920-21 1921-22 1922-24 1924-25 1926-25 1926-26 1926-20 1926-30 1930-31 1930-31 1930-31					1	1	1	1	1	1	3 \$4, 38			1	1	1		
1019-20 1020-21 1020-23 1021-25 1021-25 1021-25 1021-25 1021-20 1021-20 1030-31 1030-31 1031-31 1031-31 1031-31				1	1	1				-	1						1	
1919-20 1920-21 1922-22 1922-24 1925-26 1925-26 1925-26 1925-26 1925-26 1925-36 1935-37 1935-31 1935-31 1935-31					1		1			1								
		019-20	20-21	121-22	022-23	323-24	924-25	925-26	926-27	927-28	928-29	929-30	930-31	931-32	932-33	933-34	34-35	

¹ Less than 10 quotations.

³ Less-than-car-lot sales to jobbers.

Bureau of Agricultural Economics.

Compiled from daily market reports from Bureau representatives in the markets. Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily range of selling prices. In some cases conversions were made from larger to smaller units, or vice versa, in order to obtain comparability. Prices do not include Russet Burbanks.

Street sales.

In this table the potato season begins in January of one year and extends through June of the next year. Thus the \$7.19 in May 1920 on first line is the price of the last of old-crop potatoes, and the \$9.03 in May 1920 on second line is the price of early or new-crop potatoes that month.

Table 247.—Potatoes, Idaho, Russet Burbanks: Average car-lot price per 100 pounds to jobbers at Chicago, 1924-25 to 1934-35

Season	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау
1924-25 1925-26 1926-27 1927-28 1928-20 1929-30 1930-31 1931-32 1932-33 1932-33 1934-35	1 \$2.48 1.84 2.68 1.72	\$2. 33 3. 11 2. 71 1. 72 1. 30 2. 00 1. 73	\$2. 84 1. 78 1. 63 2. 98 2. 18 1. 43 1. 14 1. 61 1. 51	\$2. 04 3. 99 2. 93 1. 75 1. 65 2. 86 1. 88 1. 39 1. 19 1. 63 1. 57	\$3. 67 2. 75 1. 59 1. 60 2. 88 1. 82 1. 52 1. 17 1. 61 1. 55	\$2.30 4.19 2.83 1.73 1.64 3.18 1.84 1.54 1.19	\$2, 59 3, 95 2, 75 1, 89 1, 68 3, 14 1, 62 1, 40 1, 23 2, 10	\$2. 41 4. 15 2. 88 2. 51 1. 60 3. 19 1. 67 1. 38 1. 22 1. 91	\$2. 44 4. 78 3. 24 1. 97 1. 83 3. 79 1. 70 1. 32 1. 37 1. 66	\$3. 51 4. 24 1. 50 1. 95 3. 59 1. 51 1. 25 1. 43 1. 44

¹ Less-than-car-lot sales to jobbers.

Bureau of Agricultural Economics; compiled from daily market reports from the Bureau representative

Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily range of selling prices.

Table 248.—Potatoes: International trade, average 1925-29, annual 1930-33

					Calend	ar year			***************************************	
Country	Average	1925-29	19	30	19	31	19	32	193	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES Netherlands Belgium Italy Canada Poland Hungary Spain Argentina Algeria Czechoslovakia Estonia Irish Free State Union of Soviet So-	3,855 2,773 2,341 2,138	1,000 bushels 659 5,090 1,933 688 12 262 1,226 213 1,413 951 1 647	1,000 bushels 20,602 9,726 4,853 7,128 1,478 1,899 2,576 2,616 1,552 347 412 386	1,000 bushels 373 9,562 1,960 844 4 762 557 1,898 443 0 557	1,000 bushels 18,678 9,958 4,533 6,136 4,794 3,089 4,018 1,591 1,075 139 974 1,271	1,000 bushels 1,072 10,880 4,215 329 9 53 745 18 1,837 423 1	1,000 bushels 18,532 9,993 4,987 2,061 2,634 7,755 6,244 1,393 1,395 88 621 1,038	1,000 bushels 393 6,163 1,939 188 5 14 751 70 2,009 293 0 161	1,000 bushels 9,414 1,168 4,249 1,925 672 3,510 1,193 1,749 1 175 485	1,000 bushels 341 4,384 1,150 180 17 659 396 1,592 448 0
cialist Republics Japan	756 606 193	19 0 0	752 365	0 0 0	772 455	0 0 0	0 662 449	0 0 62	0 867 393	0 0 32
Total PRINCIPAL IMPORT- ING COUNTRIES	58, 808	13, 104	54, 693	17,054	57, 4 87	19, 902	50, 852	12, 048	26, 683	9, 200
Germany United Kingdom France United States Cuba Austria Switzerland Portugal Uruguay Brazil Egypt Denmark Finland Yugoslavia Sweden Tunis Philippine Islands Venezuela Norway	9,850 2,434 75 865 120 1 0 139 67 1 98 36 2 0 0 44	16, 623 14, 071 12, 205 4, 284 3, 903 2, 596 1, 748 1, 483 1, 182 845 719 624 469 422 411 358 161 358	3, 671 2, 066 7, 563 1, 899 83 223 1 1 63 38 0 0 7 1 1 0 0 2 1	11, 755 10, 735 9, 191 5, 060 2, 393 1, 336 2, 489 1, 093 765 332 256 84 44 510 260 260	18, 175 1, 694 6, 768 1, 060 1, 060 204 140 242 2794 77 34 28 2 2 2 2 2 2 2 2 2 2 2 3	4, 355 31, 039 16, 332 4, 567 1, 149 986 21, 069 3 917 265 544 210 811 25 543 468 269 269	7, 425 1, 953 2, 938 912 27 241 0 3 3 121 980 7 7 4 294 10 0 0 479	4, 613 28, 979 8, 026 974 604 2, 236 2, 435 21, 255 219 603 72 106 139 457 229 0	1, 259 1, 610 2, 378 719 11 1 2, 75 6 5 0 0 0 57	2, 619 7, 333 3, 530 1, 180 661 1, 594
Total	21,861	64, 492	15, 741	52, 145	29, 445	66,023	15,606	50, 331	6, 153	18, 778

¹ Preliminary.

^{3 -} year average.
3 International Yearbook of Agricultural Statistics.

Bureau of Agricultural Economics; official sources except where otherwise noted. These figures do not include sweetpotatoes.

Table 249.—Sweetpotatoes: Acreage, production, weighted average price per bushel received by producers, and value, United States, 1919-34

Year	Acre- age har- vested	Average yield per acre	Produc- tion	Price	Farm value, basis weight- ed aver- age price	Year	Acreage har- vested	Average yield per acre	Produc- tion	1.1.100	Farm value, basis weight- ed aver- age price
1919 1919 1920 1921 1922 1923 1924 1924 1925 1928	1,090 acres 803 792 768 819 819 675 467 567 637 646	Bushels 97. 3 99. 0 100. 4 90. 3 96. 1 94. 9 80. 2 79. 2 78. 2 98. 3	1,000 bushels 78, 092 78, 422 77, 124 73, 958 78, 665 64, 041 37, 444 45, 201 49, 845 63, 531	Cents 169. 2 141. 9 113. 5 100. 8 121. 0 150. 0 165. 4 117. 5	1,000 dollars 132, 676 109, 416 83, 947 79, 306 77, 474 	1927 1928 1949 1929 1930 1931 1931 1933 1931	1,000 acres 724 638 650 646 649 785 926 759 762	Bushels 98. 3 93. 5 100. 3 100. 6 81. 8 80. 3 84. 7 85. 8 88. 5	1,000 bushels 71, 156 59, 650 65, 193 64, 963 53, 117 63, 043 78, 431 65, 134 67, 400	Cents 109. 0 118. 4 117. 1 108. 2 72. 5 53. 7 69. 7 80. 7	1,000 dollars 77, 539 70, 637 76, 081 57, 482 45, 688 42, 154 45, 411 54, 389

1 Preliminary. Bureau of Agricultural Economics. Acreage, yield, and production figures are estimates of the Crop Reporting Board, revised 1919–28. See introductory text. Italic figures are census returns. Prices are based upon returns from crop reporters.

Table 250.—Sweetpotatoes: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harv	ested	Yie	ld per s	icre	P	roductio	n	Price crop	
State	Aver- age, 1927- 31	1933	1934 1	A ver- age, 1922- 31	1933	1934 1	A ver- age, 1927- 31	1933	1934 1	1933	19341
New Jersey Indiana Illinois Iowa Missouri Kansas Delaware Maryland Virginia North Carolina South Carolina Georgia Florida Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas California	37 69 48 86 20 16 57 70	1,000 acres 12 4 6 3 10 5 7 6 85 85 58 21 20 76 63 88 74 10	1,000 acres 13 4 7 7 3 11 5 5 6 82 54 89 20 19 60 81 77 80 11 27 80 11	### Bu. 128 118 91 91 94 117 135 151 127 98 82 82 87 84 92 74 87 77 101	Bu 175 100 70 90 75 98 130 160 111 93 83 83 70 992 71 90 75 70 75 85 80 95	Bu. 155 110 80 60 51 135 135 108 82 80 90 95 103 94 106 60 73 50 90	1,000 bushels 1,580 337 478 231 898 1,493 4,602 6,794 4,247 1,710 1,331 5,165 5,929 5,363 5,263 1,461 1,043	1,000 bushels 2,100 420 750 910 910 910 93,885 7,905 4,648 7,600 1,470 1,840 5,396 5,180 1,170 6,240 950	1,000 bushels 2,015 440 580 5810 7510 3,010 8,856 4,428 7,120 1,800 1,805 6,180 7,614 7,526 6,180 7,614 7,526 1,620 5,740 3,300 990	Cents 80 97 89 132 87 77 66 66 63 75 79 74 71 65 66 65 65 120	Cents 89 95 80 131 96 122 70 76 77 71 93 96 68 87 73 86 73 89 90
United States	688	759	762	90.2	85. 8	88.5	62, 386	65, 134	67, 400	69.7	80.7

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 251.—Sweetpotatoes: Car-lot shipments, by State of origin, 1924-25 to 1933-34

				Cro	o-movem	ent sease	on 1			
State	1924- 25	1925- 26	1926- 27	1927- 28	1928- 29	1929- 30	1930- 31	1931- 32	1932- 33	1933- 34 ²
New Jersey	103 73 1,755 5,213 816 1,018 1,018 175 81 1,137 649 36 371 558 107 221	Cars 1, 357 236 101 1, 742 1, 520 4, 750 1, 510 231 674 241 90 2, 592 663 156 476 2, 340 216 4, 161 1, 318	Cars 1,770 284 161 1,885 2,283 6,501 1,683 162 678 185 302 4,972 515 79 548 1,285 268 7,186 316 25,755	Cars 1, 225 209 119 1, 517 2, 256 6, 618 1, 711 276 687 185 3, 587 211 392 1, 147 294 1, 284 805 187	Cars 1, 223 231 85 1, 470 2, 106 6, 480 786 130 227 2, 915 393 126 316 316 317 777 777 773	Cars 1, 090 352 164 1, 454 1, 859 7, 090 729 375 527 125 288 3, 692 570 1, 463 102 802 728 174	Cars 1, 078 355 193 771 975 5, 361 883 337 348 114 222 2, 903 320 219 175 1, 224 78 78 717 869 234	Cars 1, 531 484 211 1, 346 862 4, 973 592 70 335 166 479 2, 4410 362 1, 315 16 593 128 1, 316 16 593 190 16, 828	Curs 844 819 281 736 736 434 83, 262 584 195 148 72 498 158 22 46 963 40 238 5520 186	Cars 1,554 112 32 991 493 2,920 76 15 101 76 32 104 1,086 177 1,017 66 344 4818 73

i Crop-movement season covers 12 months, from July of one year through June of the following year. Figures for certain States include shipments for month preceding or following the regular crop-movement season.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not

included.

Table 252.—Sweet potatoes: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	July 15	Aug. 15	Sept.	Oct.	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	Cents 188. 7 185. 6 136. 4 119. 5 135. 9 125. 0 101. 1 63. 9 67. 8 87. 0	146. 7 131. 0 136. 2 136. 3 107. 8 68. 1 93. 0	177. 4 153. 9 121. 9 120. 9 127. 9 128. 7 81. 4 55. 3 76. 2	110.6 98.1 111.2 112.5 110.7 66.1 44.0 63.3	144. 4 88. 5 86. 5 100. 2 97. 7 93. 8 58. 2 37. 7 56. 4	94. 0 91. 9 101. 8 98. 9 94. 1 58. 5 38. 9 60. 5	149.3 97.8 93.4 104.2 103.1 98.1 61.4 42.2 67.2	109. 0 98. 6 113. 7 109. 6 100. 8 61. 8 43. 5	171. 4 112. 3 109. 6 117. 0 114. 6 105. 5 64. 4	113. 7 64. 0 49. 9	192. 2 118. 9 121. 4 125. 9 126. 4 115. 2 64. 6 55. 8	136. 0 124. 7 129. 8 128. 6 108. 5	117. 5 109. 0 118. 4 117. 1 108. 2 72. 5

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 221. Only monthly prices are comparable.

² Preliminary.

TABLE 253.—Sweetpotatoes: Average l. c. l. price per bushel to jobbers, New York and Chicago, 1925-26 to 1934-35

Market, and season	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау
New York: 1925-26. 1928-27. 1927-28. 1928-29. 1939-30. 1931-32. 1932-33. 1933-34. 1934-35. Chicago: 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1933-34. 1933-34.	\$1. 53 2. 21 1. 31 1. 57 1. 60 1. 77 1. 21 1. 43 1. 65 2. 04 2. 23 1. 54 2. 01 1. 72 1. 12 1. 12 1. 12 1. 12 1. 16 1. 16	\$1. 70 1. 47 1. 13 1. 20 1. 34 1. 40 . 67 . 60 . 79 1. 01 2. 04 1. 72 1. 55 1. 68 1. 18 1. 18 1. 18 1. 13 1. 12 1. 50	\$1. 68 .97 .93 1. 05 1. 09 1. 21 .54 .65 .83 2. 02 1. 30 1. 39 1. 46 1. 59 .93 1. 14 1. 24	\$1.70 .98 1.29 1.31 1.28 .54 .70 .92 2.25 1.37 1.44 1.77 1.64 1.77 1.09 1.19 1.19	\$2. 23 1. 24 1. 48 1. 62 1. 60 1. 56 . 57 . 61 . 2. 42 1. 69 1. 1. 68 1. 2. 73 1. 74 74 74 74	\$2.61 1.37 1.68 1.98 1.90 .56 .73 1.01 2.37 1.70 1.216 12.40 11.90 1.88 .98 .98 1.50	\$2. 59 1. 46 1. 88 2. 18 2. 18 2. 16 67 82 1. 07 2. 29 1. 66 1 2. 51 1 2. 49 2. 06 2. 02 1. 02 1. 99 1. 54	\$2.96 1.61 2.08 2.32 1.66 2.09 .68 .97 1.20 2.40 1.52 1.2.09 12.22 2.26 .99 1.05 1.71	\$3. 42 1. 81 2. 04 2. 06 	1. 16 1. 47

¹ Kiln-dried.

Bureau of Agricultural Economics; compiled from daily market reports from Bureau representatives in

A verage prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

Table 254.—Spinach, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934

		Acreage		1	Production	n.	Pric	e for crop	o of—
Utilization	A verage 1928-32	1933	1934	Average 1928-32	1933	1934	Average 1928-32	1933	1934
For market	Acres 47,760	Acres 64, 010	Acres 54, 590	1,000 bushels ¹ ² 12,580 Short	1,000 bushels ¹ 11,546 Short	1,000 bushels 1 10, 928 Short	Dollars 0. 49	Dollars 0.37	Dollars 0. 40
For manufacture	11, 110	10, 100	15, 290	tons 52, 700	tons 36, 000	tons 41,300	14. 97	12, 03	11.86

Bushels containing approximately 18 pounds.
 Includes some quantities not hervested on account of market conditions: 3,195,000 bushels in 1929;
 19,000 in 1931, and 31,000 in 1932. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Table 255.—Spinach: Car-lot shipments, by State of origin, 1923-34

					Crop-n	oveme	nt seaso	n 1				
State	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York Missouri Maryland Virginia South Carolina Arkansas Texas California Washington Other States	Cars 24 46 798 3, 208 422 2, 433 473 23 151	Cars 23 103 725 3, 107 161 3 3, 038 70 40 237	Cars 12 113 619 2,946 501 24 3,235 241 123 105	Cars 12 100 846 2,669 614 37 4,513 305 121 166	Cars 14 33 670 3, 213 462 47 4, 495 145 131	Cars 24 100 749 3,066 282 191 5,528 334 156 163	Cars 102 27 628 2, 974 110 84 5, 559 494 154 216	Cars 41 34 172 2,586 75 141 6,085 177 207 118	Cars 46 50 441 1,332 82 127 7,302 71 170 152	Cars 53 50 102 1,127 5 62 6,669 100 145 81	Cars 42 127 56 1,963 11 68 5,877 101 161 113	Cars 51 246 35 1,174 30 95 6,202 22 102 106
Total	7,580	7, 507	7,919	9, 383	9, 655	10, 593	10, 348	9, 636	9,773	8,394	8, 519	8,063

i Crop-movement season covers 15 months, from October of the preceding year through December of the year shown. Figures for Maryland, Washington, and New Jersey, include shipments in January succeeding the regular crop-movement season.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 256.—Strawberries, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934

		Acreage		P	roduction	1	Price	for erop	of-
Group and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Early: Alabama Florida Louisiana Mississippi Texas	5, 240 7, 500 25, 180 1, 460 2, 090	Acres 4, 460 11, 200 26, 000 3, 100 2, 000	Acres 3, 150 9, 000 27, 000 1, 400 2, 160	1,000 crates 2 368 529 3 1,434 84 112	1,000 crates 2 334 784 3 1, 248 124 80	1,000 crates 2 220 675 3 1,242 3 77 184	Dollars 2. 74 6. 19 4. 70 2. 98 4. 42	Dollars 0. 95 3. 00 2. 90 1. 05 2. 85	Dollars 1.40 4.20 3.05 1.60 3.35
Total Second early: Arkansas California, southern district Georgia North Carolina South Carolina Tennessee Virginia	16, 880 1, 580 340 6, 280 390 14, 500 7, 740	19, 500 1, 600 400 6, 500 550 20, 000 7, 800	22, 000 1, 150 450 6, 800 650 19, 400 7, 700	32, 527 819 338 18 622 29 800 567	3 2, 570 3 897 352 24 670 44 3 1, 240 3 702	3 2, 398 3 1, 518 205 27 476 39 8 1, 048 3 732	2. 61 3. 70 2. 59 2. 67 2. 77 2. 23 2. 39	2. 56 1. 45 2. 64 1. 00 1. 77 1. 72 1. 05 1. 15	1. 30 2. 32 1. 90 2. 25 2. 00 1. 10 1. 30
Total	47,710	56, 350	58, 150	3, 193	3 3, 929	3 4, 045	2.60	1.46	1.44

See footnotes at end of table.

² Preliminary.

Table 256.—Strawberries, commercial crop: Acreage, production, and season average price per crate received by producers, by States; average 1928-32, annual 1933 and 1934—Continued

		Acreage		P	roduction	1	Price	for crop	of—
Group and State	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934	Aver- age 1928-32	1933	1934
Intermediate: Califorma, other Delaware Ulinois Kansas Kentucky Maryland Missouri New Jersey Oklahoma	Acres 2, 360 3, 900 4, 590 920 5, 690 8, 280 18, 120 4, 700 1, 480 50, 040	Acres 3, 010 3, 900 6, 000 900 9, 000 8, 060 14, 800 6, 500 1, 800	Acres 3, 280 3, 700 6, 400 8, 600 7, 250 16, 000 6, 500 1, 900	1,000 crates 2 450 313 252 45 371 555 795 405 49	1,000 crates 2 572 3 410 420 45 3 540 3 846 3 740 630 50	1,000 crates 2 784 352 320 16 533 652 3 720 540 3 76	Dollars 3. 34 2. 23 2. 63 2. 79 2. 99 2. 26 2. 95 2. 51 2. 66 2. 69	Dollars 2. 21 . 85 1. 35 1. 75 1. 20 . 95 1. 60 1. 44 1. 90 1. 41	Dollars 2. 27 1. 50 1. 75 2. 00 1. 65 1. 25 1. 75 1. 70 1. 55
Late: Indiana Iowa Michigan New York Ohio. Oregon Pennsylvania Utah Washington Wisconsin Total Grand total	1, 590 2, 720 4, 980 4, 550 2, 640 10, 400 2, 940 1, 430 8, 230 2, 890 42, 370	2, 150 2, 900 5, 550 4, 810 2, 700 6, 180 3, 100 7, 200 3, 000 39, 090	2, 100 3, 000 5, 050 2, 700 8, 500 3, 250 1, 420 7, 500 3, 150 42, 370	117 172 343 421 160 741 268 98 567 193 3,080	183 145 361 457 176 297 239 93 360 195 2,506	74 66 285 505 189 3 595 260 43 3 638 173 3 2, 828	2. 68 3. 49 3. 27 3. 44 3. 34 2. 81 2. 95 2. 54 2. 52 3. 53 3. 07	1. 20 2. 10 1. 40 1. 90 1. 65 1. 50 1. 70 1. 70 1. 90	1. 90 2. 40 1. 60 2. 40 2. 20 1. 60 2. 20 1. 70 1. 35 2. 00

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

¹Includes undetermined quantities used for canning, cold pack, etc.

*24-quart crates containing approximately 36 pounds.

*Including some quantities not harvested on account of market conditions: Early—Alabama, 25,000 crates in 1934; Louisiana, 70,000 crates in 1928, 168,000 in 1929, 412,000 in 1932, 208,000 in 1933, and 135,000 in 1934; Mississippi, 15,000 crates in 1934; second early-Arkansas, 97,000 crates in 1933 and 198,000 in 1934; Tennessee, 200,000 crates in 1933, and 136,000 in 1934; Virginia, 117,000 crates in 1933 and 62,000 in 1934; Maryland, 121,000 crates in 1933; Missourl, 80,000 crates in 1932, 118,000 in 1933, and 112,000 in 1934; Oklahoma, 13,000 crates in 1934; late-Oregon, 85,000 crates in 1934; Washington, 113,000 crates in 1934. Price refers to harvested portion of crop. harvested portion of crop.

Table 257.—Strawberries: Car-lot shipments, by State of origin, 1929-34

			Calenda	r year ¹		
Group and State	1929	1930	1931	1932	1933	1934 2
Early: Alabama Florida Louisiana Mississippi Texas Other States	Cars 1, 354 1, 633 2, 859 115 253 1	Cars 771 1,721 2,389 74 92 6	Cars 1,154 1,862 4,720 127 65 3	Cars 755 1,760 2,664 131 38	Cars 893 2, 084 2, 610 114 39	Cars 450 1,830 2,778 73 106 3
Total	6, 215	5, 053	7, 931	5, 348	5, 740	5, 240
Second early: Arkansas California (southern district) Georgia North Carolina South Carolina Tennessee Virginia	1,483	688 16 9 756 9 1, 158 335	578 13 14 1,228 44 1,066 525	1,721 75 11 619 58 1,282 393	1, 092 62 13 849 74 1, 632 475	2, 144 18 11 306 35 1, 217
Total	7, 028	2,971	3, 468	4,159	4, 197	3,929
Intermediate: California (other) Delaware Illinois Indiana Iowa Kansas Kentucky Maryland Missouri New Jersey Oklahoma	418 273 105 52 63 851 734	203 203 163 33 48 29 404 424 807 106 39	174 111 119 64 36 23 395 352 692 60 3	366 94 175 150 44 13 1,070 326 795 67	385 158 211 188 222 15 988 358 765 41	405 241 138 38
Total	5, 007	2, 459	2, 029	3, 112	3, 145	2,747
Late: Massachusetts Michigan New York Oregon Washington Wisconsin Other States	79 55 103 61 26	44 57 31 35 12 7	21 53 58 40 23 8	21 71 85 112 32 59 7	11 102 24 2 2 2 18 10	15 18 25 11 23 32 14
Total	376	186	212	387	169	138
Grand total	18, 626	10, 669	13, 640	13,006	13, 251	12, 054

¹ Crop movement is for calendar year, except Florida and Texas starting with 1933 season, which begin in December of the preceding year.

² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not

included.

Table 258.—Tomatoes: Commercial acreage, season average price received by producers, and production; imports and exports, United States, 1924-34

	Commercial acreage Season average price received by producers			nercial action	Imports, year beginning Exports, beginning						
Year	For mar- ket	For manu- fac- ture	For mar- ket, per bush- el ¹	For manu- fac- ture, per ton 3	For mar- ket	For manu- fac- ture	Fresh	Canned ³	Paste	Canned	Catsup and sauces
1927 1928 1929 1930 1931 1931 1932	134, 020 111, 030 138, 900 139, 470 142, 620 154, 640 158, 970 157, 610 154, 430	Acres 291, 270 355, 130 263, 300 267, 970 270, 850 323, 720 407, 950 296, 120 280, 510 352, 130	1.96 2.14 1.62 1.81 1.82 1.61 1.10 1.03 1.14	14. 79 14. 71 14. 31 14. 19 15. 25 15. 05 11. 80 10. 08 11. 39	1, 037, 104 721, 542 924, 002 827, 807 896, 707 900, 046 897, 343 954, 159 855, 049	1,000 pounds 2,380,400 3,618,400 1,997,200 2,391,800 1,994,400 3,515,000 1,952,800 2,398,600 2,182,600 2,779,200	82, 448 124, 489 113, 357 128, 627 139, 886 113, 480 122, 215 59, 028 46, 150	84, 897 80, 257 103, 782 114, 042 147, 429 75, 173 91, 572 72, 226	18, 179 15, 642 12, 064 9, 539 16, 547 11, 605 12, 154 11, 405	5, 794 7, 504 6, 725 4, 009 4, 872 2, 916 4, 621 4, 038	8, 584 13, 066 10, 419 5, 210 3, 221 2, 561

¹ Bushels containing approximately 53 pounds.

Bureau of Agricultural Economics; production figures based on returns from crop reporters and canning establishments; imports and exports compiled from Monthly Summary of Foreign Commerce of the United States, June issues. Beginning 1933-34 imports are imports for consumption. See introductory text.

Table 259.—Tomatoes, commercial crop: Acreage, production, and season average price per bushel and per ton received by producers; average 1928-32, annual 1933 and 1934

		Acreage			Production	1	Price f	or crop	of—
Utilization, marketing season, and State	Average 1928-32	1933	1934	Average 1928-32	1933	1934	Average 1928-32	1933	1934
For market: Fall Early (sec. 1) Early (sec. 2) Second early Intermediate Late (sec. 1) Late (sec. 2)	35, 960 29, 320 9, 560	Acres 6, 100 12, 900 25, 400 34, 000 37, 210 31, 970 6, 850	Acres 4,300 12,000 23,400 40,700 41,210 33,600 6,700	1,000 bushels 1 256 1,218 2,036 23,498 24,817 24,206 860	1,000 bushels 1 250 1,703 1,705 2,666 24,494 4,582 733	1,000 bushels 1 334 2,040 1,566 24,120 4,903 4,286 831	Dollars 2. 56 2. 89 2. 52 1. 47 1. 05 . 98 1. 58	2.17 1.80 1.56 1.52 .85 .69 1.42	2. 19 2. 60 2. 39 .81 .93 .84 2. 07
Total For manufacture: New York New Jersey Pennsylvania Ohio Indiana Illinois. Michigan Iowa Missouri Delaware. Maryland Virginia Kentucky Tennessee Arkansas Colorado Utah California Other States 3	12, 620 33, 800 4, 740 10, 670 62, 940 5, 420 2, 030 5, 500 12, 680 39, 780 6, 110 10, 500 21, 000 21, 000 2, 130	12, 300 27, 000 6, 000 9, 800 55, 000 2, 500 4, 500 12, 000 13, 300 6, 600 1, 400 3, 600 3, 600 30, 470	161, 910 15, 900 7, 800 7, 800 11, 900 83, 000 10, 100 3, 150 4, 300 2, 400 18, 500 55, 800 18, 900 2, 600 2, 5000 40, 400 15, 780	216,891 Short tons 83,200 181,900 18,000 60,490 11,500 21,600 43,600 43,600 16,300 22,600 47,800 15,300 22,600 27,400 27,400	2 16, 133 Short tons 76, 300 89, 100 25, 200 72, 500 15, 000 16, 000 26, 600 134, 000 46, 200 34, 500 9, 100 164, 500 37, 900	\$\frac{2}{3}\$,080\$ \$\frac{2}{3}\$ I8,080\$ \$\frac{2}{3}\$ I10,200\$ \$112,200\$ \$122,800\$ \$34,300\$ \$78,500\$ \$15,400\$ \$17,300\$ \$7,700\$ \$1,400\$ \$1,500\$ \$6,600\$ \$1,600\$ \$1,600\$ \$1,600\$ \$23,000\$ \$23,000\$ \$23,000\$ \$50,600\$ \$50,600\$	1. 47 13. 90 17. 90 14. 40 10. 60 11. 50 12. 20 11. 80 14. 60 11. 10 11. 80 10. 30 13. 70 12. 12 12. 61	1. 14 11. 00 13. 50 11. 60 9. 30 10. 90 7. 90 9. 30 17. 40 15. 30 12. 10 9. 50 10. 00 10. 00 8. 70 9. 20 12. 00 9. 20 9. 20 9. 20 9. 20 9. 20 9. 20 9. 20	11.70 14.00 14.30 9.30 12.20 8.50 9.60 10.00 13.50 10.00 10.30 10.00 9.20 9.60 12.51
Total	315, 830	280, 150	352, 130	1, 293, 000	1, 081, 300	1, 389, 600	13. 27	11.39	12, 18

² Short tons. 3 Includes "otherwise prepared."

⁴ Preliminary.

¹ Bushels containing approximately 53 pounds.

² Includes some quantities not harvested on account of market conditions: 41,000 bushels in 1928; 75,000 in 1930; 168,000 in 1931; 126,000 in 1932; 134,000 in 1933; and 1,082,000 in 1934. Price refers to harvested portion

^{18 1805, 108,000} in 1831; 125,000 in 1832; 134,000 in 1933; and 1,082,000 in 1934. Price refers to harvested portion of crop.

§ Other States includes Connecticut, Florida, Georgia, Idaho, Kansas, Louisiana, Mississippi, Nebraska, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Texas, Washington, West Virginia, and Wisconsin.

Bureau of Agricultural Economics; estimates based on returns from crop reporters and canning establishments.

Table 260.—Tomatoes: Car-lot shipments, by State of origin, 1924-34

Q L. I					Cale	ndar ye	ar 1				
State	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
New York New Jersey Ohio Indiana Illinois Maryland Virginia South Carolina South Carolina Florida Arkansas Louisiana Tennessee Mississippi Texas Colorado Utah Washington California Other States Total	1, 479 230 66 167 8 421 9, 140 38 9 985 3, 776 1, 604 77 380 33 2, 789 1, 399	Cars 1, 024 1, 907 1, 288 1, 889 1, 889 313 379 	Cars 656 2,006 1,065 1,514 422 259 4,351 281 281 2,374 3,492 2,374 3,492 27 272 355 4,440 1,041 26,068	Cars 951 1, 329 1, 125 1, 132 270 586 360 21 187 9, 737 240 8, 20 84, 349 3, 395 4, 620 842 32, 664	Cars 1,112 678 926 799 240 613 277 3 161 8,491 389 -2,759 3,230 4,435 59 89 143 4,475 706 30,395	Cars 838 694 1, 020 1, 631 237 775 488 2 2 348 8, 038 300 6 2, 317 4, 099 5, 338 740 215 4, 241 820 32, 202	Cars 514 842 1,007 2,217 316 554 243 118 461 6,495 318 102,496 3,451 7,546 138 342 336 5,458 716	Cars 774 52 1,360 683 339 373 166 158 348 5,485 217 13 2,038 2,683 8,774 195 323 2,60 27,846	Cars 463 17 960 279 139 313 147 162 225 57 2,026 2,869 4,108 67 198 4,307 270 23,207	Cars 408 11 679 148 53 267 61 83 162 2355 1,429 2,408 6,340 80 282 100 3,727 207	Cars 562 562 58 605 605 605 606 153 7,705 322 1,702 3,012 3,012 3,647 211 25,136

¹ Figures for Florida, Texas, and California include shipments for months preceding or following the regular crop-movement season.

² Preliminary.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not ncluded.

Table 261.—Tomatoes, canned: Pack 1 in the United States, 1923-31 and 1933-342

						Season					
STATE	1923	1924	1925	1926	1927	1928	1929	1930	1931	1933	1934
New York New Jersey Pennsylvania Ohio Indiana Missouri Delaware Maryland Virginia 4 Kentucky Tennessee Arkansas Colorado 6 Utah California Other States United States	1,000 cases 266 412 258 174 717 839 1,216 5,722 963 59 176 270 182 2,397 437	1,000 cases 325 186 150 133 1,050 871 803 3,825 1,116 136 768 180 417 1,767 406	1.000 cases 389 418 338 179 1, 955 1, 286 1, 272 6, 175 1, 138 275 382 1, 168 325 1, 183 274 1, 239 744	1,000 cases 302 204 118 120 900 895 228 1,901 572 223 280 558 183 235 2,347 389	1,000 cases 300 254 167 1,131 605 827 3,671 1,059 253 678 127 792 2,257 459	1,000 cases 261 95 95 124 613 396 325 1,720 486 111 160 613 158 924 1,991 487 8,539	1,000 cases 329 257 122 163 1,134 622 851 4,050 918 167 769 297 769 2,812 701	1,000 cases 467 356 151 429 2,029 1,078 755 3,770 818 1,050 293 3,460 875	1,000 cases 497 144 160 304 1,192 519 340 1,710 508 161 227 1,028 864 844	1,000 cases 485 111 183 427 1,685 (2) 266 2,636 2,77 1,488 4,573 925 11,986	1,000 cases 738 128 234 522 2,043 (0) 401 3,611 1,005 445 5 134 (1) 420 2,577 853

Stated in cases of 24 No. 3 cans.
 No comparable figures for 1932.
 Included in Arkansas.
 Includes West Virginia.

Bureau of Agricultural Economics; compiled from National Canners' Association, 1923-26 and 1934; Bureau of Census, 1927-29; Foodstuffs Division, Bureau of Foreign and Domestic Commerce, 1930-33.

Includes Missouri.
 Includes Washington.
 Included in "Other States."

Table 262.—Walnuts: Production and average price per ton received by producers, California and Oregon, 1924-34

		California	a Oregon					
Year	Production	Price	Farm value, ba- sis average price	Production	Price	Farm value, ba- sis average price		
1924	Short tons 22, 500 36, 000 15, 000 51, 000 25, 000 39, 000 29, 000 45, 500 39, 000 39, 000	Dollars 460 440 480 330 420 320 410 233 174 222 220	1,000 dollars 10, 350 15, 840 7, 200 16, 830 10, 500 12, 480 12, 300 6, 757 7, 917 7, 104 8, 580	Short tons 400 500 900 800 1, 500 1, 250 700 2, 000 3, 000 1, 000 3, 200	Dollars 480 480 500 360 440 360 400 275 240 280 300	1,000 dollars 192 240 450 288 660 450 280 550 720 280 960		

¹ Preliminary.

Table 263.—Watermelons, commercial crop: Acreage, production, and season average price per 1,000 melons received by producers; average 1928-32, annual 1933 and 1934

		Acreage		F	roductio	n	Price	of—	
Marketing season	Aver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934	A ver- age 1928-32	1933	1934
EarlySecond earlyLate	Acres 42, 870 139, 220 43, 980	Acres 30, 000 107, 150 49, 200	Acres 31, 500 114, 400 50, 740	1,000 melons 115,601 138,543 116,103	1,000 melons 8,835 124,057 117,207	1,000 melons 9,625 121,906 17,430	Dollars 189 107 121	Dollars 163 77 85	Dollars 140 99 101
Total	226, 070	186, 350	196, 640	170, 247	1 50, 099	1 48, 961	128	95	108

 $^{^1}$ Includes some quantities not harvested on account of market conditions, 5,677,000 melons in 1930; 1,761,000 in 1931; 8,663,000 in 1932; 1,354,000 in 1933, and 122,000 melons in 1934. Price refers to harvested portion of crop.

Bureau of Agricultural Economics; estimates based on returns from crop reporters.

Table 264.—Watermelons: Car-lot shipments, United States, 1925-34

Season	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Total
1925 1926 1927 1928 1929 1930 1931 1932 1932 1934	Cars 4 36 2 3	Cars 605 443 1, 713 508 3, 498 121 696 1, 637 1, 181	Cars 11, 767 11, 424 15, 255 10, 410 22, 047 17, 830 16, 282 11, 534 7, 967 10, 635	Cars 17, 814 29, 923 20, 898 24, 937 18, 287 29, 028 23, 733 13, 966 13, 824 11, 678	Cars 11, 524 11, 509 6, 262 11, 408 7, 582 10, 306 10, 344 5, 274 5, 382 4, 683	Cars 2, 390 1, 861 1, 261 1, 183 1, 007 1, 359 1, 593 655 919 330	Cars 82 28 67 50 57 102 58 21 20	Cars 2	Cars 44, 184 55, 186 45, 460 48, 497 52, 514 59, 014 52, 131 32, 148 29, 752 28, 518

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. California data for earlier years in 1928 Yearbook, table 165.

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

										
State	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 2
Indiana Iowa Missouri Maryland Virginia North Carolina South Carolina Georgia Florida Alabama Mississippi Arkansas Oklahoma Texas Washington California Other States	375 991 4,232 14,754 7,190 1,880	Cars 389 135 2, 843 402 375 1, 301 5, 395 19, 379 208 471 249 6, 314 191 6, 278 931	Cars 45 107 533 161 4,031 16,762 8,485 1,379 182 321 182 321 5,619 200 5,221 547	Cars 322 123 851 208 488 1, 252 3, 822 17, 558 9, 195 769 197 347 513 6, 450 261 5, 589 552	Cars 299 83 1, 039 210 487 758 3, 494 21, 882 10, 479 722 251 439 538 4, 460 307 6, 366 700	Cars 102 100 1, 405 311 5, 018 25, 998 8, 685 270 270 270 6, 282 502	Cars 305 109 2, 641 620 935 2, 486 4, 206 18, 545 9, 561 9, 561 189 312 244 4, 107 192 6, 241 510	Cars 32 60 1, 770 462 961 1, 628 3, 601 9, 364 5, 364 3, 57 173 73 3, 159 140 4, 343 456	Cars 16 82 2, 351 3707 1, 705 4, 397 9, 291 4, 241 542 34 42 2, 272 2, 272 383 9	Cars 110 42 2, 629 333 926 1, 237 2, 349 8, 948 8, 862 971 286 193 6 2, 208 152 3, 960 301
Total	44, 184	55, 188	45, 460	48, 497	52, 514	59,011	52, 131	32, 148	29, 752	28, 513

Table 265.—Watermelons: Car-lot shipments, by State of origin, 1925-341

Bureau of Agricultural Economics; compiled from daily and monthly reports received by the Bureau from officials and local agents of common carriers throughout the country. Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included.

Table 266 .- Frozen and preserved fruits: Cold-storage holdings, United States. 1925-26 to 1934-35

Year	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1
1925-26	1, 000 lb. 19, 168 23, 347 41, 075 38, 372 42, 285 35, 854 66, 358 69, 068 51, 922 53, 512	39, 421 57, 670 60, 916 56, 539 44, 795 88, 979 90, 323 60, 029	50, 941 62, 974 83, 228 64, 863 73, 360 110, 223 92, 717 69, 275	59, 825 65, 352 79, 211 64, 993 81, 734 107, 271 91, 908 67, 631	57, 990 62, 412 79, 457 61, 348 81, 178 103, 427 87, 302 64, 877	56, 088 61, 840 77, 274 61, 752 80, 049 99, 234 83, 579	54, 189 56, 971 73, 195 57, 860 76, 737 96, 074 79, 651 61, 713	50, 773 54, 661 68, 725 54, 942 74, 845 92, 305 74, 595 59, 926	48, 921 52, 196 60, 216 48, 085 70, 646 88, 819 70, 184	45, 716 43, 945 53, 310 41, 723 66, 636 82, 283 63, 613	43, 455 40, 137 48, 570 38, 554 60, 822 78, 162 58, 983	39, 147 36, 659 41, 392 32, 535 56, 740 72, 194 51, 861

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments.

 $^{^{1}}$ Crop-movement season extends from Apr. 1 through November of a given year. 2 Preliminary.

TABLE 267.—Fruits and venetables: Unloads of 18 commodities at 68 markets, in car lots, 1934, and total 1920-34

Water- melons	Curs 1, 2311153 1, 2321153 2, 2337 3, 2337 1, 2411 1, 2412 2, 2422 2, 2432 2,
Toma- toes	2. 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,
Sweet- pota- toes	### ### ### ### ### ### ### ### ### ##
Straw- berries	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Pota- toes	20
Plums 4	Cons Cons
Pears	Curs 25 25 25 25 25 25 25 25 25 25 25 25 25
Peaches	27 24 26 26 26 26 26 26 26 26 26 26 26 26 26
Onions Oranges ⁸ Peaches	2. 1. 0. 1.0. 1.0. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.
Onions	Cars 123 123 123 123 123 123 123 123 124 125 125 125 125 125 125 125 125 125 125
Let- tuce 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Lem- ons	Cars 202 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Grapes	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Grape- fruit	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2
Celery	20 20 20 20 20 20 20 20 20 20 20 20 20 2
Canta- loups 1	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.
Cab- bage	\$5428648668688888888888888888888888888888
Apples	25.2
Market	Akron. Akton. Atlanta Atlanta Bultimore Birmingham Boston Bridgeyort Buffalo Growland Columbus Dalius Dalius Daven Columbus Daven Columbus Daven Columbus Daven Bartord Houtoh El Paso Betroit Grand Rapida Hartord Houston Counville El Paso Betroit Grand Rapida Hartord Houston Counville Roans City Granss City Granss City Granss City Mineapolis Mineapolis Mourbil Mourbil Mourbil Mounville Mourbil Mo

51111251105 01 114	CIID IIIID VEGEINE
805 24 5 25 0 22 0 28 24 28 24 28 24 28 24 28 24 28 24 28 24 28 24 28 24 28 28 28 28 28 28 28 28 28 28 28 28 28	22, 997 22, 997 22, 735 27, 106 27, 106 31, 242 34, 492 32, 481 32, 481 31, 390 19, 891
	28, 244 28, 28, 288 28,
1,08 17,1 20 20 20 20 20 20 20 20 20 20 20 20 20	8, 495 10, 721 12, 772 16, 752 14, 601 14, 960 13, 960 13, 147 10, 213 8, 937 8, 118
	2, 657 3, 800 6, 781 11, 098 11, 098 12, 726 13, 200 13, 200 13, 200 13, 200 10, 463 10, 585 10, 585 9, 684
4 171 4 188 4 189 1, 174 6, 527 6, 527 1, 1095 1, 1095 1, 183 8, 183 1, 183 1, 185 1,	53, 764 58, 841 65, 840 65, 440 1112, 857 1111, 063 1111, 063 1111, 063 1111, 063 1111, 063 1112, 857 1142, 707 116, 289 116, 289 116, 289 116, 289 1174, 003 1187, 603 1187, 603
101 7 12 888 888 88 88 88 88 88 88 88 88 88 88 8	4, 091 4, 829 4, 171 5, 390 4, 579 3, 566 3, 866
302 2082 2082 2082 2082 2091 2091 2092 2094 2094 2094 2094 2094 2094 2094	13, 674 16, 372 13, 281 18, 281 18, 728 11, 561 8, 340 9, 256
90 90 90 90 90 90 90 90 90 90 90 90 90 9	7, 731 11, 297 11, 297 11, 297 12, 28, 28, 28, 28, 28, 28, 28, 28, 28, 2
2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	24, 187 46, 271 46, 271 46, 271 49, 271 49, 760 49, 760 77, 218 73, 838 71, 333 71, 353
1, 330 1900 1222 1222 1228 1028 868 868 862 262 262 263 263 100 100 100 100 100 100 100 100 100 10	10, 645 110, 704 110, 704 110, 704 110, 704 110, 838 110,
1, 483 348 348 348 314 314 316 316 316 316 316 316 316 316 316 316	25, 52, 52, 53, 53, 53, 53, 53, 53, 53, 53, 53, 53
88888888888888888888888888888888888888	6, 527 7, 474 9, 439 12, 184 13, 199 13, 349 14, 126 13, 570 11, 957 13, 630
1, 23 2, 45 1, 28 1, 28 1, 28 2, 28 2, 28 2, 28 1, 28 1, 28 1, 28 2, 28	48, 995 55, 458 65, 905 67, 656 64, 895 64, 895 64, 816 37, 512 28, 582 27, 196
25.45.25.25.25.25.25.25.25.25.25.25.25.25.25	13, 693 13, 886 11, 886 11, 886 11, 888 15, 883 21, 739 20, 877 18, 229 19, 229 18, 239 18, 23
910 940 941 955 960 975 975 975 975 975 975 975 975 975 975	4, 809 7, 075 113, 082 114, 1087 114, 1087 117, 20, 662 127, 667 127, 203 117, 205 117, 205 1
1,102 13,02 11,103 11,1	11,136 12,12,12,12,13,13,13,13,13,13,13,13,13,13,13,13,13,
98 282 282 7117 117 282 183 183 183 183 183 183 183 183 183 183	10, 138 11, 128 12, 128 12, 128 12, 128 13, 128 13, 128 13, 148 13, 148 13, 148 13, 148 14, 148 14, 148 15, 148 16, 148 17, 148 18, 14
1,309 487 487 487 487 76 76 830 830 832 832 832 836 836 836 836 836 836 836 836 836 836	33. 25. 25. 25. 25. 25. 25. 25. 25. 25. 25
Pittsburgh. Portland, Maine Portland, Maine Portland, Orge Providence. Richmond Rochester St. Louis R. Paul Sal Faul Sal Autonio San Autonio San Autonio San Autonio San Francisco Seattle Spirevegort. Sicur City Spokane Spokane Terre Haute Terre Haute Toledo Wachester Wachester Toledo	1920 1921 1922 1922 1926 1926 1927 1927 1927 1920 1930 1931 1931

¹ Includes Casabas, Honey Dews, Honey Balls, Persian melons and mixed melons of these classes.
² Includes romaine.
³ Includes targenes and satsumas.
⁴ Includes fresh prunes.
⁴ Includes fresh prunes.
⁴ Thotals includes 1920-23, 12 markets; 1924-26, 36 markets; 1927-34, 66 markets.

Burean of Agricultural Economics; compiled from daily reports made by common carriers to Burean representatives in the various markets. Unloads as shown in car lots include boat receipts reduced to ear-lot equivalents but exclude truck and 1. c. 1. express and freight receipts. This table not comparable with table published in Yearbooks prior to 1934.

STATISTICS OF MISCELLANEOUS CROPS

Table 268.—Beans, dry, edible: Acreage, production, value, and foreign trade, United States, 1919-34

							70 4	
		4		Weighted average price per	Farm value,	Whole- sale	Foreign to beginni	ng July
Year	Acreage harvested	Average yield per acre	Produc- tion	pounds received by pro- ducers 2	basis weighted average price 3	price per 100 pounds at Chi- cago 4	Imports 5	Domestic exports ⁵
1919	1,000 acres 1,162	Pounds 727.0	1,000 bags ⁶ 8,447	Dollars	1,000 dollars	Dollars	1,000 bushels	1,000 bushels
1919 1920 1921	1,077 913 861 1,129	752. 0 661. 8 706. 7 699. 8	8, 099 6, 042 6, 085 7, 901	6. 81 4. 31 4. 76 5. 82	47, 954 24, 710 27, 707 42, 984	7. 92 6. 76 4. 61	3, 806 824 520	1, 993 1, 216 1, 100
1922 1923 1924 1925	1,322 1,582 1,614	725. 2 587. 7 728. 6	9, 587 9, 298 11, 760	5. 37 5. 61 5. 00	48, 734 48, 792 53, 774	7. 46 7. 04 5. 46 6. 16	2, 623 886 1, 421 1, 271	672 695 549 576
1926 1927 1928 1929	1,611 1,450 1,535	646. 2 629. 0 642. 7 699. 4	10, 410 9, 120 9, 866 12, 212	5. 04 5. 52 7. 27	46, 242 47, 315 68, 622	4. 95 5. 53 9. 00	1, 051 2, 465 1, 505	529 427 316
1929 1930 1931	2,110 1,913	658. 8 671. 4	12, 240 13, 900 12, 843	6.77 4.19 2.14	79, 118 55, 420 25, 825	9. 76 6. 63 4. 55	2, 534 1, 346 222	296 271 158
1932 1933 1934 ⁹	1,692	741. 5 729. 2 737. 2	10, 440 12, 338 10, 159	2. 01 2. 79 3. 65	20, 025 32, 465 34, 710	2, 46 2, 97 3, 69	157 8 145	140 116

¹ Table includes, besides the ordinary edible beans and limas, the Blackeye of California which is identical with the blackeyed pea of the South. Soybeans not included.

² Price of cleaned beans.

7 Acresge grown alone.

Elimports for consumption.

9 Preliminary.

Bureau of Agricultural Economics.

Italic figures are census returns; census figures include all States; other figures, estimates of Crop Reporting Board, principal producing States only, revised, 1919-28. See introductory text.

Estimates of acreage, yield, production, price to producers, and farm value previous to 1919, as published in Yearbook for 1933 and earlier years, are not comparable with the revised series in this table.

³ Price of cleaned beans.
³ Farm value of dry, edible beans equals the price of cleaned beans applied to the production of cleaned beans rather than total production.

⁴ Compiled from Ohicago Daily Trade Bulletin, pea beans.
⁵ Imports and exports compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1919-26; January and June issues, 192-34; and official records of the Bureau of Foreign and Domestic Commerce.

Table 269.—Beans, dry, edible: Acreage, yield, production, and weighted average price per bag of 100 pounds received by producers, by States, averages, and annual 1933 and 1934

	Acreag	e harv	ested	Yi	eld per a	cre	P	roductio	n	Price for crop of—	
State	Aver- age, 1927-31	1933	1934 2	Aver- age, 1922-31	1933	1934 ²	Aver- age, 1927-31	1933	1934 ²	1933	1934 2
Maine	1,000 acres 8 3 100 546 9 4 12 38 138 29 374 163 7 4 3 328	1,000 acres 9 3 117 510 5 7 16 13 34 121 315 176 9 1275	1,000 acres 8 3 110 515 6 7 12 29 122 26 186 44 10 1 299	Pounds 4 848 4 641 773 621 470 579 546 - 876 1,082 343 371 425 - 1,002	Pounds 810 540 690 390 420 720 360 900 1, 380 1, 080 340 600 1, 280	780 600 810 630 390 570 	1,000 bays 3 68 21 797 2,803 28 25 51 380 1,561 293 1,384 686 33 4 10 3,412	1,000 bags 3 73 16 842 3,519 20 29 115 47 306 1,670 335 1,204 598 38 6 3,520	1,000 bags 3 62 18 891 3,244 23 21 68 	Dol- lars 5. 20 4. 95 3. 10 2. 25 2. 55 2. 25 3. 55 2. 25 3. 55 2. 25 3. 55 2. 25 3. 55 2. 25 3. 55 3. 20 3. 55 3. 50 3.	Dol- lars 5. 30 5. 15 3. 40 2. 85 3. 30 3. 95 4. 05 3. 25 3. 25 3. 70 5. 40 5. 55 4. 50 4. 35
United States	1,769	1,692	1, 378	665. 6	729. 2	737. 2	11,594	12, 338	10, 159	2. 79	3.65

¹ Table includes, besides the ordinary edible beans and limas, the Blackeye of California which is identical with the blackeyed bea of the South. Sovbeans not included.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

Table 270.—Beans, dry, edible: Production by classes, 100-pound bags, United States, 1924-34

Class 2	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 3
	1,000 bags 4, 121 540 77 40 87 176 881 73 70 284 172 1, 329 20 277 480	1,000 bags 4,967 739 200 25 51 117 222 57 886 163 60 43 1,18 1,56 800 300 0430	1,000 bags 3,646	1,000 bags 2, 325	1,000 bags 2, 723 1, 253 1, 253 424 23 112 31 575 282 106 578 1, 542 1, 542 12 428 890 401 382	1,000 bags 3, 339 1, 764 415 21 135 422 417 393 107 620 104 2, 327 12 514 987 486 557	1,000 bags 2,834 2,114 489 24 166 39 345 520 120 627 81 3,174 16 852 1,102 696 701	1,000 bags 3,872 2,030 429 15 212 117 633 488 147 433 144 1,567 20 459 1,064 663 550	1,000 bags 4,827 1,073 226 4 92 53 362 268 71 515 76 899 3 275 877 322 532 253	1,000 bags 3,805 1,646 417 3 102 64 440 329 97 597 93 1,902 8 587 943 630 675	1,000 bags 3,488 1,140 402 1 103 105 422 294 137 515 140 502 1,003 700 667
Total	9, 298	11,760	10, 410	9, 120	9, 866	12, 240	13,900	12, 843	10, 440	12, 338	10, 159

² Preliminary. 3 Bags of 100 pounds.

Short-time average.
Less than 500 acres.

 ¹ Table includes, besides the ordinary edible beans and limas, the Blackeye of California, which is identical with the blackeyed pea of the South. Soybeans not included.
 2 The bean classification figures in table 263 of 1932 Yearbook, and similar data in preceding issues, were on a different basis from those in table 258 of 1933 Yearbook, table 259 in 1934 Yearbook, and those in the present table. The present grouping has been made upon a classification basis consistent with the United States standards for beans.
 2 Preliminary.
 3 Preliminary.
 4 Special California classes.
 5 Including production of dark red beans in Michigan: 69,000 bags in 1930, 76,000 in 1931, 91,000 in 1932, 70,000 in 1933, and 57,000 in 1934.
 6 Including, in some Western States, seed beans of garden varieties.

Bureau of Agricultural Economics; based on reports by growers on proportion of total production made up of each variety, supplemented by investigations of field statisticians. Revised, 1919-28. See introductory text.

TABLE 271.—Beans, dry, edible: Average price per 100 pounds, 1925-26 to 1934-35

				PEA,	NEW	YOF	RK 1						
Year	Sept.	Oet.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Aver- age 2
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	6. 65 10. 75 10. 19 8. 31 4. 21	Dol. 5.80 6.03 6.60 8.90 9.50 6.58 3.61 2.25 3.48 4.08	Dol. 5. 99 6. 18 6. 39 9. 38 8. 29 5. 73 3. 66 2. 01 3. 29 3. 68	Dol. 5. 90 6. 02 6. 40 10. 00 7. 91 5. 54 3. 01 1. 88 3. 20 3. 39	Dol. 5.75 5.71 6.78 10.42 7.97 5.52 2.82 1.84 3.30	Dol. 5. 57 5. 50 7. 96 11. 29 7. 81 5. 33 2. 75 1. 82 3. 38	Dol. 5. 26 5. 38 9. 41 11. 05 7. 26 5. 11 2. 65 2. 10 3. 26	Dol. 5. 08 5. 30 10. 23 10. 55 6. 83 4. 97 2. 56 2. 67 3. 04	Dol. 5. 11 5. 70 10. 29 10. 68 7. 12 5. 01 2. 65 3. 15 3. 01	Dol. 5.13 6.39 10.48 10.42 7.08 4.74 2.59 2.89 3.15	Dol. 5.06 6.54 10.68 9.56 6.88 4.56 2.52 3.68 3.16	Dol. 5. 07 6. 71 10. 75 10. 16 7. 58 4. 71 2. 82 4. 00 3. 53	Dol. 5. 44 5. 88 8. 55 10. 26 7. 87 5. 51 2. 99 2. 58 3. 31
		G	REA'	r Noi	RTHE	RN, C	HICA	GO 3					
1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	9.97 6.75 4.81	8.00 9.88 6.25 3.49 2.75 4.14 5.08	6. 30 8. 44 8. 21 5. 46 3. 36 2. 52 3. 94 4. 97	6. 13 8. 86 7. 37 5. 20 3. 44 2. 58 3. 69 4. 82	6. 46 9. 47 7. 25 5. 06 3. 50 2. 47 3. 75	7. 14 9. 96 6. 75 4. 82 3. 38 2. 48 3. 75	5. 91 8. 44 9. 95 6. 25 4. 50 3. 38 2. 70 3. 86	5. 85 8. 40 9. 50 6. 25 4. 46 2. 85 3. 04 3. 88	5. 85 9. 57 9. 50 6. 20 4. 37 2. 45 3. 83 3. 71	9. 62 9. 54 6. 06 4. 60 2. 62 3. 68 3. 49	8. 71 9. 20 9. 90 6. 25 4. 44 2. 81 3. 60 3. 62	9. 38 9. 00 9. 90 6. 31 4. 54 2. 82 4. 23	8. 14 9. 28 7. 23 5. 04 3. 24 2. 96 3. 87
		C.	ALIF	ORNI.	A LIM	[A, N]	EW Y	ORK 1					
1925-26 1928-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	6. 96 9. 90 16. 76 12. 05 6. 08 5. 41	14. 11 8. 44 6. 97 9. 76 14. 39 9. 90 5. 78 5. 41 6. 31 6. 84	13. 24 7. 68 6. 85 10. 56 13. 27 8. 74 5. 88 4. 86 6. 07 6. 65	11. 88 7. 01 6. 83 12. 01 12. 95 7. 37 5. 50 4. 63 5. 92 6. 50	11. 83 7. 14 7. 00 12. 61 12. 28 7. 58 5. 10 4. 55 5. 91	12.06 6.94 7.87 13.42 12.07 7.94 4.56 4.52 6.16	11. 20 6. 97 8. 33 13. 50 12. 71 7. 56 4. 26 4. 55 6. 50	10. 13 6. 97 9. 06 13. 50 12. 71 7. 50 4. 26 5. 01 6. 48	9. 15 6. 86 9. 69 14. 40 12. 67 7. 40 4. 28 6. 29 6. 26	8. 88 6. 74 9. 75 15. 25 12. 45 6. 55 4. 40 6. 41 6. 35	8. 76 6. 68 9. 90 15. 90 12. 01 5. 98 4. 49 6. 64 6. 37	8. 55 6. 67 10. 17 16. 17 11. 95 6. 29 4. 96 7. 00 6. 41	11. 31 7. 25 8. 28 13. 08 13. 02 7. 90 4. 96 5. 44 6. 30
			(ALIF	ORN	IA PII	NK 4						
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	5. 68 2. 79 3. 28 3. 76	5. 76 5. 02 4. 71 5. 48 6. 21 4. 39 2. 94 3. 05 3. 37 5. 30	5. 16 4. 90 4. 70 6. 26 6. 02 3. 90 3. 69 2. 74 3. 38 5. 44	5. 23 4. 90 4. 68 6. 54 5. 92 3. 97 3. 90 2. 71 3. 02 5. 41	5. 73 4. 92 4. 92 7. 37 5. 61 3. 96 3. 55 2. 52 3. 00	5. 46 4. 73 5. 74 7. 14 5. 56 3. 90 3. 12 2. 31 3. 26	5, 38 4, 76 6, 14 7, 10 5, 42 3, 81 2, 77 2, 40 3, 17	5. 20 4. 89 6. 23 6. 86 5. 40 3. 62 2. 70 2. 92 2. 92	5. 14 5. 18 6. 34 6. 93 5. 61 3. 41 2. 68 3. 69 2. 79	5. 52 5. 60 6. 25 6. 97 6. 25 3. 29 2. 68 3. 63 2. 88	5. 36 5. 82 6. 00 6. 86 6. 38 3. 12 2. 62 3. 76 3. 21	5. 02 5. 62 5. 48 7. 45 6. 38 3. 04 2. 93 4. 11 3. 55	5. 52 5. 09 5. 54 6. 67 5. 92 3. 84 3. 03 3. 09 3. 19

Prices represent prevailing values of the commodity and grade specified, as indicated by sales from receivers to wholesale (distributors.
 Where prices are missing, average is for months shown.
 Quotations are for wholesale prices to the local trade.
 F. o. b. rail, California, straight cars.

1934-35_____

Bureau of Agricultural Economics; compiled from the Chicago Daily Trade Bulletin; New York Producers Price Current, daily; and California Fruit News, weekly.

Table 272.—Beans, dry, edible: Car-lot shipments, by State of origin, 1924-25 to 1933-34

Otata				Cro	p-moven	nent seas	on 1			
State	1924-25	1925–26	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-342
New York Michigan Montana Idaho Wyoming Colorado New Mexico California Other States	Cars 1,900 7,848 124 1,336 31 1,316 388 1,847 134	Cars 1, 158 10, 506 288 1, 898 82 2, 927 170 2, 558 138	Cars 916 8, 699 280 1, 437 130 1, 866 412 3, 433 114	Cars 614 4, 989 386 2, 074 252 1, 711 608 3, 251 55	Cars 889 6, 383 566 1, 973 347 1, 732 555 2, 961 122	Cars 1,056 5,616 733 2,516 577 2,347 1,750 3,588 239	Cars 961 5,046 647 2,671 785 4,312 624 2,850 357	Cars 1, 922 6, 635 402 2, 412 499 1, 883 901 2, 253 218	1,000 bags 689 4,185 112 1,024 133 491 340 3 869 62	1,000 bags 598 2,741 118 1,211 183 788 207 1,413 81
Total	14,924	19,725	17, 287	13, 940	15, 528	18, 422	18, 253	17, 125	7,905	7,430

¹ Crop-movement season extends from September of one year through August of the following year. ² Preliminary

3 In addition to rail shipments, 190,267 bags were shipped by river boats or barges.

Bureau of Agricultural Economics; compiled from monthly reports received by the Bureau from local agents of common carriers throughout the country.

Shipments as shown in car lots include those by boat reduced to car-lot basis. Shipments by truck not included. Beginning 1932-33, shipments are reported in bags of 100 pounds each and the data include all shipments originating at shipping points whether in car lots or less than car lots. The figures therefore are not comparable with those in other years, which are for car-lot shipments only.

Table 273.—Beans, dry, edible: Production in specified countries, bags of 100 pounds, average 1921-22 to 1925-26, annual 1930-31 to 1934-35

	A verage 1921–22 to 1925–26	1930–31	1931–32	1932–33	1933-34	1934-35 3
Canada United States Mexico England and Wales Scotland Netherlands France Italy Spain Germany Czechoslovakia Austria Hungary Yugoslavia Rumania Bulgaria Roland Graece Japan 5. Chosen Brazil Chile Madagascar Total, all countries	7,000 bags 736 8,926 3,787 7327 2,410 2,345 3,388 212 11,748 4,681 1,055 4,684 4,175 1,513 6,116 6,12,199 6,	1,000 bags 863 13,900 1,820 3,118 429 3,119 3,490 3,631 255 214 255 214 247 476 1,364 2,919 103 14,868 2,919 103 14,868 247 40,026 62,026	1,000 bags 782 12,843 2,947 2,690 397 3,284 2,692 3,427 1,335 2,205 7,284 1,707 1,010 2,581 1,010 2,581 1,010 1,01	1,000 bags 685 10,440 2,907 2,647 3,42 3,970 3,339 204 204 204 21,858 1,909 3,306 7,142 2,166 351 1,078 39,258	1,000 bags 534 12,338 4,097 2,633 613 338 2,299 3,411 5,427 145 237 145 27,290 31,817,780 327 2,444	4, 158 184 353 328 \$1, 631 \$2, 690 \$6, 173 \$1, 675 1, 614

¹ Excluding soy, mung, adzuki, broad, and horse beans and similar classes not commonly used as edible beans in the United States.

Preliminary.
 Unofficial estimate.

^{4 -} Year average.
5 Production in Hokkaido Province, where most of the dry edible bean varieties are grown.

^{6 3-}year average.

Bureau of Agricultural Economics; official sources and International Institute of Agriculture except as otherwise stated.

Figures are for the harvesting seasons 1921 to 1934 in the Northern Hemisphere and 1921–22 to 1934–35 in the Southern Hemisphere.

Table 274.—Soybeans: Acreage, yield, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934

		Soy	beans	gath	ered				Soy	beans :	produc	ed 2		
State	Aer	eage ¹		d per ere	To quai gath	otal atity ered	-	Acreage	e	Pr	oducti	on	bes gath	
	1933	19343	1933	19343	1933	1934 8	A ver- age, 1927- 31	1933	1934 8	A ver- age, 1927- 31	1933	19343	1933	19343
Ohio	1,000 acres 2116 290 6 82 132 111 27 6 6 16 16 6 6 6 7 7 4 7 4 4 6 3	501 22 148 117 5 26 6 16 22 84 5 14 5 10 12	15. 0 12. 0 11. 5 17. 0 11. 5 14. 0 12. 5 12. 0 10. 0 12. 5 7. 5 12. 0 14. 5	16. 0 19. 0 10. 5 12. 0 13. 5 5. 0 17. 0 13. 5 13. 0 10. 5 13. 0 10. 5 13. 0 10. 5 13. 0 10. 5	1, 740 4, 350 24 69 1, 394 1, 518 94 378 78 200 36 60 54 48 98 58 63	2, 400 9, 519 21 600 2, 000 878 25 442 90 216 26 1, 008 45 65 105 65 125 722 120	127 263 2 2 42 96 8 21 33 215 30 166 65 14 17	132 111 27 6 26 26 200 25 10 19 17 7 23 11 107	1,000 acres 24 150 501 25 148 117 5 26 6 24 2 200 14 18 14 8 29 177 124 4	1, 077 72 246 71 377 36 3, 104 339 165 257 727 727 178 477 240	1, 740 4, 350 24 69 1, 394 1, 518 94 378 788 325 36 2, 200 90 90 90 238 128 84 322 160 1, 124	2, 400 9, 519 21 60 2, 000 878 25 442 26 2, 400 126 94 105 104 362 204 1, 240	.86 .81 .89 1.17 1.03 1.19 1.12 1.18 1.27 1.27 1.44 1.83 1.63 1.63 1.60 1.49	1, 20 1, 10 1, 50 1, 50 1, 50 1, 50 1, 25 1, 25 1, 25 1, 60 2, 30 1, 50 1, 50 2, 30 2, 10 2, 21 2, 25
United States.	847	1, 152	13.8	15. 4	11, 670	17, 762	1,140	1, 145	1, 447	15, 845	14, 982	21, 074	1.11	1.32

Table 275.—Soybeans: Production in specified countries, 1924-25 to 1934-35

Crop year	United States	Man- churia ¹	Chosen	Japan	Nether- lands Indies
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1932-34.	1,000 bu. 5, 190 5, 131 6, 063 7, 596 8, 819 8, 670 12, 217 15, 463 13, 121 11, 670 17, 762	1,000 bu. 92,667 116,667 135,000 163,319 177,804 178,389 193,564 192,058 156,817 169,056 132,259	1,000 bu. 18,723 23,600 22,276 24,300 19,510 20,434 22,989 21,155 22,578 23,324 21,961	1,000 bu. 16,596 18,473 12,512 16,704 15,239 13,592 15,531 12,719 12,349	1,000 bu. 3,536 3,933 3, 672 3,971 4,303 3,917 4,693 4,722 5,471 6,542

Manchuria produces about 97 percent of the soybean production of China. Production figures for China are not available.
 Preliminary.

¹ Solid equivalent of acres from which soybeans were gathered.
² Excluding soybeans cut for hay. Soybeans planted in corn and soybeans grazed or hogged off are included for the Southern States where they are important, but omitted for Northern States where relatively unimportant.

3 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Bureau of Agricultural Economics; compiled from official sources.

Table 276.—Soybeans: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Oet.	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Weight- ed av- erage
1925-26 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1932-33 1933-34 1934-35	Dol. 2. 27 1. 97 1. 86 1. 72 1. 79 1. 64 . 58 . 55 . 68 . 95	Dol. 2. 18 1. 85 1. 70 1. 69 1. 70 1. 48 . 52 . 45 . 69 . 89	Dol. 2. 17 1. 83 1. 61 1. 70 1. 73 1. 44 . 61 . 73 1. 11	Dol. 2. 38 1. 90 1. 70 1. 82 1. 85 1. 46 . 62 . 45 . 81	Dal. 2. 33 2. 03 1. 69 1. 93 1. 91 1. 40 . 59 . 45 1. 01	Dol. 2. 39 1. 98 1. 85 2. 13 2. 00 1. 42 . 66 . 48 1. 16	Dol. 2. 27 2. 07 1. 93 2. 19 2. 07 1. 38 . 65 . 58 1. 26	Dol. 2. 37 2. 15 2. 06 2. 30 2. 11 1. 39 . 64 . 86 1. 25	Dol. 2. 67 2. 20 2. 13 2. 41 2. 16 1. 29 61 . 98 1. 45	Dol. 2.71 2.14 2.12 2.46 1.96 1.12 .58 1.04 1.54	Dol. 2. 31 2. 06 2. 01 2. 15 1. 90 . 94 . 58 . 94 1. 25	Dol. 2. 27 1. 91 1. 89 1. 87 1. 80 . 82 . 57 . 85 1. 05	Dol. 2. 35 2. 00 1. 84 1. 92 1. 86 1. 42 61 64 1. 11 1. 32

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; averages for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1930 Yearbook, table 298. Only monthly prices are comparable.

Table 277.—Soybeans for seed: Average wholesale selling price per bushel at Baltimore and St. Louis. 1925-34

			Balti	more					St. I	Louis		
Year	Jan.	Feb.	Mar.	Apr.	May	Aver- age	Jan.	Feb.	Mar.	Apr.	Мау	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1932 1933	Dol. 2. 85 2. 00 1. 80 1. 95 2. 25 2. 10 2. 25 . 90 . 80 1. 75	Dol. 2. 95 2. 05 1. 80 1. 90 2. 35 2. 10 2. 25 . 90 . 80 1. 75	Dol. 3. 15 2. 10 1. 80 1. 95 2. 40 2. 10 2. 25 . 90 . 80 1. 85	Dol. 2. 95 2. 15 1. 80 1. 95 2. 40 2. 25 2. 25 . 90 1. 00 1. 80	Dol. 2. 35 2. 75 1. 85 2. 15 2. 16 2. 65 2. 25 . 85 1. 45	Dol. 2. 85 2. 21 1. 81 1. 98 2. 42 2. 24 2. 25 . 89 . 97 1. 75	Dol. 2. 40 2. 15 2. 70 1. 80 2. 55 2. 15 1. 80 1. 05 . 80 1. 60	Dol. 2. 40 2. 15 2. 70 1. 80 2. 55 2. 25 1. 80 1. 05 . 80 2. 00	Dol. 2. 40 2. 30 2. 40 1. 85 2. 60 2. 25 1. 80 . 90 . 90 2. 00	Dol. 2, 25 2, 55 2, 50 2, 00 2, 75 2, 25 1, 80 1, 05 2, 00	Dol. 2.10 2.90 2.70 2.25 2.85 2.25 1.95 .80 1.30 1.75	Dol. 2. 31 2. 41 2. 60 1. 94 2. 66 2. 23 1. 83 . 94 . 97 1. 85

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the markets. These prices are the average wholesale selling prices for high-quality seed. Data for earlier years in 1928 Yearbook, table 242.

Table 278.—Soybean oil: Soybeans crushed and crude oil produced, 1924-25 to 1938-34

		So2	beans cr	ushed 1		Oil produced					
Year	Oct Dec.	Jan Mar.	Apr June	July- Sept.	Total	Oct Dec.	Jan Mar.	Apr June	July- Sept.	Toțal	
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34.	1,000 pounds 3,550 5,486 5,132 8,788 11,480 39,658 43,546 77,606 72,682 53,752	1,000 pounds 7,478 7,746 6,804 10,278 21,190 25,288 64,824 102,332 63,004 56,002	1,000 pounds 3, 038 7, 450 6, 032 8, 792 9, 666 20, 716 77, 346 65, 488 48, 680 46, 064	38, 072	1,000 pounds 18, 402 21, 040 20, 072 33, 512 52, 896 99, 986 244, 148 283, 498 208, 176 183, 232	1,000 pounds 277 728 735 1,164 1,506 5,231 6,194 10,655 10,155 7,610	1,000 pounds 870 990 862 1,289 3,046 3,343 9,107 14,682 8,667 7,989	1,000 pounds 360 874 776 1, 132 1, 277 2, 905 10, 996 9, 257 6, 834 6, 704	1,000 pounds 562 46 286 789 1,456 1,945 8,391 5,351 3,422 3,894	1,000 pounds 2, 269 2, 638 2, 659 4, 374 7, 285 13, 424 34, 688 39, 945 29, 078 26, 197	

¹ The output of meal is usually about 80 percent of the soybeans crushed.

Bureau of Agricultural Economics; compiled from reports of the Census, Animal and Vegetable Fats and Oils.

Table 279.—Soybeans and soybean oil: International trade, average 1925-29, annual 1931-33

SOYBEANS

				Calenda	ır year			
Country	Average	1925-29	19	31	19	32	193	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES China 2	1,000 pounds 3, 731, 214	1,000 pounds 0	1,000 pounds 5,074,744	1,000 pounds	1,000 pounds 2,302,596	1,000 pounds 0	1,000 pounds \$ 12,744	1,000 pounds 0
Total	3, 731, 214	0	5, 074, 744	0	2, 302, 596	0	12, 744	0
PRINCIPAL IMPORTING COUNTRIES								
Germany Japan Denmark United Kingdom Sweden Italy Netherlands United States 4	5, 574 0 0 0 0 4 42	97, 395	0 4,483 0 0 0 0 0 1,182	2, 236, 727 1, 220, 267 523, 993 247, 072 68, 753 88, 820 70, 952 3, 544	3,230 0 0 0 0 0 0 688	2, 616, 842 1, 040, 083 503, 955 349, 668 19, 856 47, 409 91, 897 2, 551	0 1,409 0 0 0 0 177 60	2,581,366 965,854 516,224 352,657 126,947 13,916 86,518 470
Total	6, 808	3, 433, 823	5, 665	4, 460, 128	3,918	4, 682, 261	1, 586	4, 643, 952
	· · · · · · · · · · · · · · · · · · ·	8	OYBEAN	OIL		***************************************		·
PRINCIPAL EXPORTING COUNTRIES								
China	45, 828 36, 742 14, 393	30, 004 3, 670 3,23 10, 182	196, 119 55, 137 40, 937 16, 009 2, 312	20, 441 1, 764 7 568 24, 302	62, 205 68, 424 49, 352 14, 115 1, 686	8, 463 4, 977 7 548 28, 645	70, 682 41, 285 2, 965 1, 655	2, 743 4, 058 0 15, 739
Total	354, 774	44, 179	310, 514	47, 075	195, 782	42, 633	116, 587	22, 540
PRINCIPAL IMPORTING COUNTRIES								
Netherlands United Kingdom United States France Morocco Algeria Austria Canada 9	49, 942 4, 528 159 0 19	109, 176 75, 917 19, 545 17, 401 8 9, 855 6, 394 6, 011 989	24, 140 32, 294 4, 551 0 7 0 1	62, 175 62, 285 4, 916 7, 337 9, 911 2 6, 062 1, 900	31, 808 5, 909 2, 647 345 0 0	56, 945 61, 130 405 8, 672 16, 073 1, 131 6, 566 1, 578	26, 130 1, 380 1, 569 104 0 0	37, 559 44, 365 3, 669 8, 506 7, 770 96 20, 874 2, 412
Total	94, 689	245, 288	60, 986	154, 568	40, 710	152, 500	29, 183	125, 251

¹ Preliminary.

4 3-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

¹ These figures are for yellow soybeans, which variety constitutes fully 98 percent of the soybean exports, according to Agricultural Commissioner Paul O. Nyhus.

³ Manchuria not included after June 1932.

 ³⁻year average.
 4 Imports for consumption.
 5 Imports for consumption.
 6 Domestic exports of soybeans are not separately reported in Foreign Commerce and Navigation of the United States; if any, included with exports of "oilseeds." Soybeans inspected for export began in October 1931, there being 7,978,800 pounds exported from October to Docember; inspected for export calendar year 1932, 253,353,480 pounds and for 1933, 15,331,740 pounds.
 7 International Yearbook of Agricultural Statistics.

⁴⁻year average.
Soybeans included with cake and meal.

Table 280.—Soubean oil, crude: Average price per pound, in barrels, New York, bu months, 1910-11 to 1934-35

						I	mport	eđ					
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Aver- age
1910-11 1911-12 1912-13 1913-14 1914-15 1916-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1921-23 1922-23 1922-24 1924-25 1926-27 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32	Cents 7. 62 6. 62 6. 48 6. 75 6. 61 10. 06 15. 70 18. 38 17. 47 12. 32 9. 22 10. 00 10. 84 12. 69 13. 38 13. 60 12. 12 12. 38 12. 62 10. 38 8. 75	17. 70 17. 52 11. 22 8. 88 10. 33 11. 00 13. 12 13. 38 12. 50	Cents	18. 17 15. 27 19. 02 8. 55 8. 88 11. 34 12. 00	Cents 7.81 6.55 6.04 6.23 8.64 12.56 18.70 13.06 18.28 9.12 11.69 12.50 13.38 12.53 13.38 12.12 12.38 12.12 12.38 12.58 8.75	19. 18 12. 95 18. 69 6. 25 10. 81 12. 35 12. 25 13. 31 13. 38 12. 12	Cents 6. 97 6. 69 5. 94 6. 38 6. 42 9. 46 13. 86 13. 86 17. 94 7. 00 11. 78 13. 38 13. 38 12. 19 12. 12 11. 98 11. 38 12. 19 12. 12 11. 38 13. 82 13. 82 13. 83 13.	7. 62 nom 12. 91 12. 16 13. 38 13. 38 12. 38 12. 19	7. 86 nom 12. 62 12. 03	20. 16 15. 55 8. 11 nom 12. 00 12. 44 13. 38 14. 00 12. 12 12. 38	Cents 6.34 6.56 6.50 6.80 6.80 7.78 13.82 19.12 13.87 10.00 11.60 12.12 12.38 11.12 10.88 8.75	Cents 6. 62 6. 56 6. 50 6. 50 1. 5. 91 8. 48 11. 7. 25 13. 628 10. 828 11. 269 13. 38 14. 00 12. 12. 38 11. 32 10. 82 8. 75	Cents 1 6. 91 6. 80 6. 18 6. 46 6. 14 8. 20 13. 06 18. 16 8. 46 19. 63 11. 65 11. 97 13. 28 13. 57 12. 29 12. 21 11. 61 9. 18
						I	omesi	ic ²					
1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	13. 00 9. 30 5. 65 4. 40 7. 60 7. 30	13. 00 8. 50 5. 55 4. 25 7. 30 7. 55	12. 50 8. 30 5. 18 4. 20 6. 98 8. 70	11.75 7.38 4.81 4.35 6.80	11. 50 7. 50 4. 45 4. 50 7. 05	10. 72 7. 50 4. 45 4. 72 7. 30	10. 40 7. 45 4. 45 4. 90 7. 30	10. 64 7. 30 4. 40 6. 30 7. 30	10.80 7.30 4.15 7.05 7.30	10. 72 7. 30 4. 12 8. 20 7. 30	10. 38 7. 20 4. 12 9. 05 7. 30	10. 18 6. 55 4. 12 8. 20 7. 30	11. 30 7. 63 4. 62 5. 84 7. 24

¹ Average for months quoted.

Bureau of Agricultural Economics. Compiled from the Oil, Paint, and Drug Reporter. Prices are average of quotations on Saturdays during the month.

Through August 1911, quotations are for English, spot; September 1911-April 1916, English or Manchuria; May 1916-January 1919, Manchuria only; February 1919, and subsequently, origin not indicated. Quotations for imported do not appear after April 1932 as importations had practically ceased as a result of a prohibitive tariff.

Table 281.—Cowpeas: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Weight- ed aver- age
1925-28	Dol. 3. 24 3. 22 1. 84 2. 01 2. 99 2. 66 1. 63 . 70 1. 30 1. 42	Dol. 3. 12 2. 79 1. 80 1. 82 2. 49 2. 41 1. 27 .67 1. 06 1. 32	Dol. 2, 93 2, 34 1, 70 1, 83 2, 30 2, 20 .98 .70 .94 1, 26	Dol. 2. 98 2. 05 1. 72 1. 83 2. 22 2. 05 . 93 . 63 . 87 1. 25	Dol. 2, 87 1, 95 1, 65 2, 02 2, 28 1, 86 93 60 92 1, 30	Dol. 3.03 1.94 1.71 2.15 2.40 1.80 .92 .60 1.03	Dol. 3. 21 1. 94 1. 74 2. 45 2. 59 1. 75 . 86 . 60 1. 26	Dol. 3.37 1.89 1.76 2.63 2.73 1.82 .88 .62 1.45	Dol. 3.50 1.93 1.86 2.88 2.85 1.87 .82 .69 1.61	Dol. 3. 43 1. 90 2. 00 3. 05 2. 93 1. 93 . 76 . 89 1. 63	Dol. 3.47 1.90 2.09 3.24 3.00 1.96 .72 1.02	Dol. 3. 47 1. 93 2. 09 3. 19 2. 93 1. 89 . 67 1. 21 1. 57	Dol. 3. 25 1. 99 1. 90 2. 63 2. 64 1. 94 . 88 . 83 1. 34 1. 66

¹ Preliminary.

² Domestic oil not quoted prior to October 1929, as production in this country had not reached commercial proportions.

Bureau of Agricultural Economics; based upon returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 245. Only monthly prices are comparable.

Table 282.—Cowpeas: Acreage, yield, production, and weighted average price per bushel received by producers, by States, average 1927-31, and annual 1933 and 1934

		Cowpeas gathered						Cowpeas produced ²							
State	Acreage 1			Yield per acre		Total quantity gathered		Acreage			Production			Price of peas gath- ered for crop of—	
	1933	1934 3	1933	1934 3	1933	1934 8	Aver- age, 1927-31	1933	1934 8	A ver- age, 1927-31	1933	1934 3	1933	1934 3	
Ind	1,006 acres 756 255 1 2 2 8 32 96 91 8 8 30 742 44 23 15	1,000 acres 14 60 30 1 2 1 9 38 99 65 7 7 26 78 65 14 76	8.0 7.0 10.0 5.2 10.0 10.0 8.5 10.0 9.4 7.0 9.4 12.8 9.5 10.8 9.5 9.5	Bu. 9.0 8.5 4.0 14.0 9.5 7.5 9.5 11.5 5.5 8.0 7.0 5.5	1,000 bu. 56 392 250 6 24 20 68 320 768 855 56 72 165 760 395 528 248 142 681	1,000 bu. 126 480 255 4 28 10 86 342 742 618 7741 552 288 208 98 418	1,000 acres 15 50 25 2 3 1 18 92 182 182 20 23 54 1122 76 70 70 38 34 141	1,000 acres 7 56 25 1 2 2 19 89 150 161 219 30 92 586 666 43 141	1,000 acres 14 60 30 1 2 10 104 151 112 19 19 26 90 95 67 39 143	1,000 bu. 125 396 245 14 31 157 1,011 1,464 1,316 204 204 205 1,291 781 829 374 1,534	1,000 bu. 56 392 250 6 24 20 1,213 147 171 165 920 545 1,152 713 408 1,297	1,000 bu. 126 480 255 4 28 10 190 936 1,132 1,064 209 218 143 855 808 720 536 273 786	Dol- lars 1. 06 1. 13 1. 35 1. 35 1. 33 1. 33 1. 33 1. 32 1. 32 1. 40 1. 32 1. 54 1. 53 1. 54	Dol- lare 1. 30 1. 35 1. 45 1.	
T. S	640	654	9.1	8.1	5, 806	5, 296	1,106	1,078	1,083	10, 989	10, 031	8, 773	1.34	1.66	

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 283.—Cowpeas for seed: Average wholesale selling price per bushel at Baltimore and St. Louis, 1925-34

			Balti	more		St. Louis						
Year	Jan.	Feb.	Mar.	Apr.	May	Aver- age	Jan.	Feb.	Mar.	Apr.	Мау	Aver- age
1925	Dol. 3. 90 4. 25 2. 25 1. 80 2. 85 3. 30 1. 05 . 80 2. 25	Dol. 3. 90 4. 25 2. 25 1. 80 3. 30 2. 90 1. 10 . 80 2. 25	Dol. 3. 90 4. 25 2. 15 2. 05 3. 75 3. 30 2. 50 1. 30 2. 25	Dol. 3. 90 4. 25 2. 10 2. 20 3. 75 3. 30 2. 50 1. 10 2. 20	Dol. 3.95 4.20 2.10 2.30 3.75 3.30 2.55 1.00 1.40 2.06	Dol. 3. 91 4. 24 2. 17 2. 03 3. 48 3. 30 2. 69 1. 07 . 96 2. 20	Dol. 3. 90 4. 50 2. 40 3. 50 3. 15 2. 40 1. 20 . 85 2. 00	Dol. 4. 00 4. 45 2. 40 3. 60 3. 15 2. 40 1. 20 . 85 2. 00	Dol. 4.10 4.20 2.40 2.40 3.60 3.15 2.40 1.10 2.90	Dol. 4. 10 4. 10 2. 40 2. 50 3. 70 3. 10 2. 40 1. 05 1. 00	Dol. 4. 10 4. 05 2. 40 2. 70 3. 75 3. 00 2. 55 1. 05 1. 75	Dol. 4. 04 4. 26 2. 49 2. 48 3. 63 3. 11 2. 43 1. 12 1. 00 1. 95

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the markets. These prices are the average wholesale selling prices for high-quality seed. Data for earlier years in 1928 Yearbook, table 246.

Solid equivalent of acres from which cowpeas were gathered.
 Excluding cowpeas cut for hay. Cowpeas planted in corn and cowpeas grazed or hogged off are included for the Southern States where they are important but omitted for the Northern States where relatively unimportant.

3 Preliminary.

Table 284.—Velvetbeans: ¹ Acreage, yield, production, and price per ton received by producers Dec. 1, by States, averages, and annual 1933 and 1934

	Acreage			Yie	ld per a	cre	Total	produc	Price Dec. 1		
State	Aver- age, 1927-31	1933	1934 2	Aver- age, 1924-31	1933	1934 2	Aver- age, 1927-31	1933	19342	1933	1934
South Carolina	1,000 acres 63 740 118 323 33 31	1,000 acres . 44 728 136 458 43 33	1,000 acres 50 795 126 527 56 41 1,595	Lb. 942 774 848 761 1,055 1,069 797. 6	Lb. 950 820 600 900 1,300 920 844.7	Lb. 1,000 760 650 910 1,140 930	1,000 short tons 31 318 49 128 20 17	1,000 short tons 21 298 41 206 28 15	1,000 short tons 25 302 41 240 32 19	Dol. 13.00 8.40 5.10 8.00 14.00 14.00	Dol. 17. 40 12. 50 10. 20 11. 60 15. 90 17. 00

¹ The figures refer to the yield and entire production of velvetbeans in the hull. The pods are gathered from one-fourth to one-third of the acreage.

² Preliminary.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

Table 285.—Broomcorn: Acreage, production, and average price per ton received by producers, United States, 1919-34

Year	Acreage har- vested	Average yield per acre	;Produc- tion	Price 1	Year	Acreage har- vested	A verage yield per acre	Produc- tion	Price 1
1919 1919 1920 1921 1922 1923 1924 1925	Acres \$38,000 327,000 266,000 222,000 275,000 536,000 434,000 226,000 319,000	Pounds	Short tons 56, 500 54, 600 37, 800 38, 200 81, 400 77, 700 31, 200 54, 700	Dollars 155. 00 127. 54 71. 63 219. 27 160. 17 96. 00 142. 60 79. 07	1927	Acres 232,000 299,000 312,000 310,000 391,000 298,000 304,000 280,000	Pounds 346.7 360.7 305.5 304.5 254.5 303.2 243.6 214.3 198.8	Short tons 40, 200 53, 800 47, 600 47, 300 49, 800 45, 200 36, 900 30, 100 29, 800	Dollars 103, 21 97, 06 114, 52 65, 60 45, 15 37, 43 104, 75 183, 29

¹ From 1919 to 1924, Nov. 15 price; 1925 and 1926, Dec. 1 price; 1927–33, average price for the crop marketing season; 1934, Dec. 1 price.

² Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board, revised, 1919-28. See introductory text.

Table 286.—Broomcorn: Acreage, yield, production, and average price per ton received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harv	ested	Yie	ld per a	cre	P	roductio	Price for crop		
State	Aver- age, 1927-31	1933	1934 1	Aver- age, 1922-31	1933	19341	Aver- age, 1927-31	1933	19341	1933	1934 2
Illinois	1,000 acres 26 1 42 133 11 55 39	1,000 acres 38 1 41 99 8 55 38	1,000 acres 49 (3) 25 120 16 52 38	Lb. 520 324 323 285 320 295 273	Lb. \$20 \$25 200 210 290 160 195	Lb. 450 120 150 365 110 132	Short tons 6, 520 180 6, 520 19, 120 1, 420 8, 100 5, 400	Short tons 6, 100 200 4, 100 10, 400 1, 200 4, 400 3, 700	Short tons 11,000 1,500 9,000 2,900 2,900 2,500	Dol. 150 137 99 89 102 93 94	Dol. 215 185 155 160 180 175
United States	306	280	300	312.8	214.3	198.8	47, 260	30, 100	29, 800	104. 75	183. 29

¹ Preliminary.

Dec. 1 price.
 Less than 500 acres

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 290.—Hay, wild: ¹ Acreage, yield, production, and price per ton received by producers Dec. 1, by States, averages, and annual 1933 and 1934

producere .	Acreage harvester			woor as	,00, 0						
	Acrea	ge harve	ested	Yiel	ld per a	cre	Pr	oductio	n	Price	Dec. 1
State and division	Aver- age, 1927-31	1933	1934 2	Aver- age, 1922-31	1933	1934 2	Aver- age, 1927-31	1933	1934 2	1933	1934
Maine	1,000 acres 6 5 7 7 1 1 5 46 13 13	1,000 acres 5 4 6 6 1 4 38 13	1,000 acres 5 5 7 7 1 4 38 14 11	Short tons 0.95 .87 .93 .97 .86 1.09 1.30 .92	Short tons 0.80 .80 .90 1.00 1.10 .95 1.50 .80	Short tons 0.85 .90 .90 1.00 1.10 1.10 .75 1.35 .65	1,000 short tons 5 5 6 7 1 6 49 17	1,000 short tons 4 3 5 5 1 4 36 20	1	Dol. 7.80 9.50 8.40 10.00 11.00 7.10 8.00 7.00	Dol. 10. 30 11. 50 11. 60 11. 10 10. 30 12. 00 10. 90 10. 60
North Atlantic.	102	86	92	1.01	. 99	. 87	109	85	80	7. 91	10. 54
Ohio Indiana. Illinois Michigan Wisconsin Winesota Iowa Missouri North Dakota South Dakota Kansas	1,667 2,273	3 9 21 31 350 1,772 163 141 1,713 1,256 2,933 714	5 10 20 57 357 1,418 140 116 805 440 2,258 550	.97 .92 .86 1.08 1.20 .97 .99 1.08 .80 .73 .94	.70 .85 .80 .95 1.10 .70 .90 .75 .60 .40 .68	. 45 . 60 . 50 . 90 . 50 . 75 . 55 . 35 . 35 . 55	3 9 19 37 248 1, 887 209 132 1, 394 1, 377 2, 100 927	2 8 17 29 385 1,240 147 106 1,028 502 1,760 486	2 6 10 46 321 709 105 64 282 154 790 302	5.00 5.00 5.60 4.70 6.20 5.10 5.30 4.70 5.40 4.20 4.30	9. 50 9. 30 10. 60 11. 00 11. 20 12. 00 13. 20 12. 80 15. 70 14. 40 12. 50
North Central	10, 245	9, 106	6, 176	. 79	. 63	. 45	8, 342	5, 710	2, 791	4.78	12. 69
Delaware	2 3 10 8 25 12 19 4	3 9 5 20 12 18 4	3 9 10 22 12 20 4	1. 16 . 92 . 75 . 95 1. 03 . 60 . 98 . 84	1. 15 . 85 . 90 . 95 1. 00 . 70 . 95 . 60	1. 40 . 85 . 80 . 50 1. 00 . 80 . 95 . 60	3 2 8 7 26 8 19 3	3 8 5 20 8 17 2	4 3 7 5 22 10 19 2	6. 00 7. 00 8. 00 7. 70 11. 00 10. 00 7. 30 10. 40	8.00 10.60 10.00 10.00 13.20 14.00 10.00 12.50
South Atlantic		74	83	. 94	. 89	. 87	75	66	. 72	8.88	11. 51
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	47 41 37 144 19	7 40 42 38 168 26 451 217	8 42 38 38 160 29 442 217	. 93 . 79 . 76 1. 02 1. 04 1. 09 . 95 . 92	1.00 .75 .75 1.00 1.05 1.20 .70 .80	.90 .75 .70 1.00 .70 .70 .60	24 36 32 39 146 20 488 176	7 30 32 38 176 31 316 174	7 32 27 38 112 20 265 130	6. 00 6. 50 7. 80 6. 70 6. 00 6. 50 4. 60 6. 90	8. 80 9. 20 10. 00 8. 30 10. 80 7. 00 10. 60 10. 50
South Central	989	989	974	. 95	. 81	. 65	960	804	631	5. 79	10. 25
Montana Idaho Wyoming Colorado New Maxico Arizona Utah Nevada Washington Oregon California	92 310 365 23 11 69 125 30 230 128	595 96 297 373 23 10 63 115 29 298 122	446 86 190 298 14 10 60 80 27 253 110	. 86 1. 16 . 88 1. 00 . 86 . 78 1. 06 . 96 1. 29 . 84 1. 08	.75 1.00 .60 1.10 .75 .90 1.10 .90 1.15 1.10	.65 .90 .50 .80 .60 .70 .60 1.30 .95	534 106 265 354 20 8 70 118 40 224 143	446 96 178 410 17 9 69 104 33 328 122	290 777 95 238 8 42 48 35 240 94	6. 50 4. 80 6. 70 5. 20 7. 80 6. 00 4. 90 4. 50 8. 40 6. 70 5. 80	11. 00 8. 00 12. 70 11. 90 13. 50 10. 00 10. 50 7. 40 7. 00 7. 00
Western		2, 021	1, 574	. 94	. 90	.75	1,882	1, 812	1, 175	5. 99	9. 75
United States	13, 418	12, 276	8, 899	. 83	. 69	. 53	11, 368	8, 477	4, 749	5. 20	11. 58

Includes prairie, marsh, and salt grasses.
 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 291.—Hay, loose: Average price per ton received by producers, United States, 1925-26 to 1934-35

ALL HAY

					1111	<u> </u>	•						
Year	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb.	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age 1
1925-26 1926-27 1927-28 1927-28 1928-29 1929-30 1930-31 1931-82 1932-33 1933-34 1934-35	Dol. 12. 48 12. 96 11. 71 10. 86 11. 17 10. 47 9. 30 6. 95 6. 99 10. 18	Dol. 12. 25 13. 04 9. 97 10. 39 10. 85 11. 31 9. 05 6. 82 7. 53 12. 50	12. 88 10. 51 10. 59 11. 05 12. 14 8. 88 6. 80 7. 53	10. 63 10. 60 11. 07 12. 17 8. 57 6. 54 7. 54	11. 18 12. 19 8. 68 6. 49 7. 69	10. 55 11. 23 11. 04 11. 33 8. 71 6. 14 7. 69	13. 38 10. 60 11. 61 11. 16 11. 21 8. 60 6. 03 7. 78	10. 24 12. 06 11. 19 10. 92 8. 45 5. 91	13. 48 10. 19	Dol. 12. 78 13. 26 10. 29 12. 30 10. 97 10. 59 8. 74 8. 59	Dol. 13. 12 13. 20 10. 70 12. 15 10. 98 10. 54 8. 48 6. 37 8. 94	13, 10 11, 01 11, 88 10, 91 9, 97 7, 60 6, 43	10. 29 11. 22 10. 87 11. 03 8. 68 6. 17
					AL	FALF	A						
1925-26 1926-27 1927-28 1927-29 1929-29 1920-30 1930-31 1931-32 1932-33 1933-34 1934-35	13. 02 12. 94 11. 73 11. 98 13. 12 11. 44 9. 80 7. 38 7. 48 10. 84	13. 00 13. 15 11. 47 11. 82 13. 17 12. 16 9. 86 7. 15 7. 90 13. 51	12. 91 13. 13 11. 34 12. 20 13. 50 12. 85 9. 67 7. 27 8. 04 14. 69	12, 97 9, 58 7, 05 8, 26	13. 74 13. 79 11. 75 13. 29 14. 00 12. 94 9. 94 7. 01 8. 26 15. 28	14. 14 13. 57 12. 02 13. 90 14. 41 12. 52 10. 31 6. 77 8. 36 15. 38		14. 24 14. 21 11. 84 15. 34 14. 45 11. 74 10. 25 6. 39 8. 58	13. 50 14. 38 12. 46 16. 07 13. 90 11. 29 10. 84 6. 34 8. 68	13. 53 13. 85 12. 56 16. 20 13. 42 11. 01 10. 79 6. 46 8. 84	13. 17 13. 59 12. 90 15. 50 12. 87 10. 87 9. 97 6. 71 9. 28	12. 42 14. 50 12. 14 10. 24 8. 63 6. 69	11. 94 13. 73 13. 73 12. 13 10. 05
					CL	OVE	₹.						
1925-26 1926-27 1927-28 1928-29 1929-30 1929-31 1930-31 1931-32 1932-33 1933-34 1934-35	13. 03 14. 40 13. 11 12. 52 11. 60 11. 71 10. 30 8. 04 8. 17 12. 17	13. 67 14. 25 12. 16 12. 25 11. 61 13. 20 10. 15 8. 03 8. 78 14. 50	14. 06 14. 60 11. 78 12. 50 11. 82 14. 62 9. 81 7. 97 9. 04 15. 56		13. 01 11. 82 14. 62 9. 65 7. 53 9. 10	9. 10	14. 79 15. 71 12. 24 13. 41 12. 24 13. 53 9. 72 7. 50 9. 39	14. 82 16. 16 11. 96 13. 59 12. 24 12. 78 9. 14 7. 27 9. 69	14. 79 15. 64 12. 02 13. 93 12. 31 12. 45 9. 46 7. 43 10. 25	14. 88 15. 51 12. 23 13. 43 12. 27 12. 57 9. 49 7. 69 10. 71	15. 21 12. 51 13. 24 12. 19 12. 21 9. 06 7. 83	14. 65 12. 63 12. 92 12. 25 11. 28 8. 38 7. 77	15. 07 12. 20 12. 97 11. 98 13. 38 9. 65 7. 74
					TIN	HTOL	Y						
1925–26 1926–27 1927–23 1923–29 1929–30 1929–31 1931–31 1931–32 1932–33 1933–34 1934–35	13. 89 16. 01 13. 29 11. 68 11. 91 12. 32 10. 77 7. 34 7. 82 11. 78	14. 06 15. 52 12. 03 11. 70 11. 61 13. 53 10. 07 7. 34 8. 39 13. 72	15. 32 11. 70 11. 77 11. 60 14. 76 9. 79 7. 20 8. 50	15. 49 11. 58 11. 86 11. 67 14. 82 9. 56 7. 19 8. 60	15. 62 11. 67 12. 18 11. 70 14. 87 9. 34 7. 04 8. 72		11. 34 12. 45 11. 55 14. 50 8. 86 6. 95	15. 82 11. 03 12. 99 11. 55 14. 36 8. 26 6. 91	15. 39 11. 14 13. 01 11. 57 14. 16 8. 36 6. 94	15. 05 11. 17 12. 86 11. 79 14. 09 8. 14 7. 18	15. 14 11. 75 12. 64 12. 04 13. 76 8. 23 7. 39	14. 97 11. 82 12. 57 12. 29 12. 84 7. 73 7. 57	15. 44 11. 71 12. 25 11. 72 14. 11 9. 17 7. 19
					PR	AIRI	E						
1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35.	8. 93 9. 63 9. 15 7. 80 8. 21 7. 12 6. 52 5. 14 5. 18 7. 90	10. 56 8. 66 7. 34 7. 96 7. 65 6. 64 4. 71 5. 54	10. 52 7. 98 7. 62 8. 13 7. 89 4. 57	10. 78 7. 67 7. 77 7. 97 7. 66 8. 53 4. 48 5. 46	7. 47 7. 47 7. 72 8. 11 7. 48 6. 67 4. 36 5. 31	7. 58 7. 58 7. 58 7. 88 8. 18 7. 31 6. 56 3. 4. 06 5. 34	11. 28 7. 41 8. 01 8. 30 7. 25 6. 48 4. 10 4. 5. 45	11. 76 6. 98 8. 33 8. 41 6. 82 6. 70 4. 01	11. 50 6. 70 8. 99 8. 11 6. 51 7. 30 3. 97	10.70 6.96 8.81 8.12 6.44 7.47	11.51 7.82 8.76 7.96 6.30 7.15 4.31	10.77 7.59 8.77 8.77 6.34 6.02 4.30	10.88 7.72 8.04 8.14 7.26 6.75 4.49

¹ For "All hay" average for the year obtained by weighting State price averages for the crop-marketing

² Preliminary for "All hay" only.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; yearly price obtained by weighting monthly prices by monthly marketings. Data for earlier years in 1928 Yearbook, tables 287-291. Only monthly prices are comparable.

Table 292. Hay, alfalfa No. 1: Average price per ton at Kansas City, 1925-26 to 1934-35

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	Av- erage
1925-26	17.80 14.75 20.00 19.00 17.50	15. 25 20. 50 20. 50 21. 50 13. 25 9. 75 11. 45	19. 40 18. 00 21. 00 23. 50 22. 00 13. 00 9. 75 11. 75	19. 50 23. 25 24. 25 22. 25 13. 00 10. 50 11. 75	20. 70 20. 00 25. 00 24. 75 23. 25 13. 00 10. 50 11. 75	20. 40 22. 25 26. 00 22. 75 22. 50 14. 25 11. 00 12. 70	20. 00 21. 50 28. 25 23. 75 21. 50 14. 00 10. 50	19. 25 22. 50 28. 75 23. 00 19. 50 14. 50	18. 75 24. 25 29. 75 22. 00 19. 75 16. 00 10. 75	19. 00 26. 00 29. 25 23. 00 19. 25	19. 00 26. 00 26. 00 21. 75 17. 25 13. 50 11. 20	19. 50 16. 75 12. 75 9. 75 9. 65	19. 00 20. 80 24. 80 22. 10 19. 90 13. 62 10. 38

Bureau of Agricultural Economics. Compiled from reports made directly to the Bureau by its representative in the market. Data for earlier years in 1928 Yearbook, table 292.

Table 293.—Alfalfa meal: Production in the United States, 1927–28 to 1934–35, and price per ton of No. 1 medium, bagged, in car lots, Kansas City, 1925–26 to 1934–35

Production

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	Total or av- erage
1927-28 1928-29 1928-20 1930-31 1930-31 1931-32 1932-33 1933-34 1934-35	tons 19, 385 26, 492 19, 075 31, 165 23, 546 14, 803 25, 350	tons 14, 674 26, 707 24, 408 24, 680 15, 096 17, 008 21, 762	38, 716 28, 884 30, 570 17, 404 15, 446 18, 127	tons 28, 128 42, 925 32, 252 41, 974 18, 933 19, 145 18, 660	tons 36, 236 40, 427 40, 927 25, 959 16, 944 18, 117 21, 258	tons 37, 760 33, 132 27, 785 28, 921 21, 164 12, 388	tons 35, 739 31, 908 42, 077 22, 957 19, 515 12, 933 15, 254 13, 948	51, 250 44, 857 34, 375 12, 606 10, 963 15, 299	tons 30, 236 36, 993 41, 847 16, 564 12, 521 10, 119	tons 25, 551 27, 893 22, 871 14, 217 10, 516 10, 067	tons 17, 865 14, 633 14, 634 13, 383 8, 747 12, 245	9, 866 11, 259 12, 955 10, 045 15, 969	Short tons 321, 318 380, 942 350, 876 301, 750 187, 037 169, 203 202, 262
1925-26. 1926-27. 1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1931-32. 1932-33. 1933-34. 1934-35.	Dol. 22. 90 23. 90 21. 60 31. 70 22. 00 18. 10 15. 40 16. 00 20. 60	23. 00 21. 75 27. 60 23. 50 22. 70 17. 90 15. 50 17. 30	22. 80 22. 40 25. 60 25. 00 24. 70 16. 80 15. 90 18. 20	22, 25 23, 40 26, 00 27, 30 26, 60 17, 60 16, 00 19, 40	22. 40 23. 10 26. 60 27. 50 25. 60 17. 20 15. 60 19. 10	22, 90 22, 75 26, 60 26, 80 25, 00 19, 00 15, 40	22. 30 23. 30 28. 60 27. 40 24. 20 18. 60 15. 25 19. 00	Dol. 24, 80 22, 00 24, 40 29, 75 27, 40 15, 10 19, 20	21, 75 26, 25 29, 90 25, 50 21, 25 17, 60 15, 00	29. 40 28. 50 23. 60 20. 40 17. 00 15. 25	21.00 33.50 28.00 25.00 21.00 17.00 15.60	22, 20 34, 25 27, 00 23, 80 19, 60	22. 32 25. 51 27. 99 25. 66 23. 05 17. 72 15. 52

¹ Fine ground.

Bureau of Agricultural Economics.

Production data from reports of meal manufacturers to the Bureau through its market news service; prices are from reports of Bureau representatives in the market and are average of bulk of sales price for one day each week.

Table 294.—Pasture: ¹ Condition, 1st of month, by States, average 1922-31, and 1934

					1004							
	Ma	y	Ju	ne	Jul	У	Aug	ust	Septer	nber	Octo	ber
State and division	Aver- age, 1922- 31	1934	Aver- age, 1922- 31	1934	Aver- age, 1922- 31	1934	Aver- age, 1922- 31	1934	Aver- age, 1922- 31	1934	Aver- age, 1922- 31	1934
Maine - New Hampshire - Vermont - Massachusetts - Rhode Island - Connecticut - New York - New Jersey - Pennsylvania - New Jersey - Ne	Pct. 85 85 84 81 82 80 78 79	Pct. 78 84 84 83 68 86 67 72	Pct. 88 89 90 87 86 86 84 83 84	Pct. 79 82 74 80 84 90 55 85	Pct. 91 90 95 88 87 88 88 79 83	Pct. 77 81 81 85 91 94 63 83 65	Pct. 88 88 94 82 81 80 83 75	Pct. 66 64 68 62 66 67 48 72 56	Pct. 84 85 89 81 79 78 77 77	Pct. 60 61 59 68 62 73 49 79	Pct. 80 81 86 80 77 79 77 77 74	Pct. 74 77 71 79 82 80 72 84 83
North Atlantic	79. 1	71. 6	84. 8	66. 5	86. 5	68. 9	81.6	55. 3	77. 5	62. 2	76.9	76. 9
Ohio	83 83 73	67 67 65 54 55 44 56 62 34 29 64	82 83 82 82 82 78 80 83 74 76 85 86	51 50 43 58 42 26 28 48 15 8 33 52	81 82 82 82 84 80 83 84 78 77 86 86	48 46 33 42 42 42 38 25 33 33 27 41 42	78 75 74 71 77 71 75 75 72 68 77 79	41 38 36 26 48 36 39 12 20 19 23 15	76 74 72 62 68 65 76 75 67 63 73	65 55 47 33 42 33 39 18 16 14 22 10	77 77 78 70 75 70 81 76 67 65 78	66 74 68 70 69 44 56 48 17 18 30
North Central	79.8	57.7	81. 9	39.3	82. 7	37. 0	75.0	29. 7	71.7	33. 8	75. 2	49.8
Delaware Maryland Virginia. West Virginia. North Carolina South Carolina Georgia Florida	78 75 78 78 82 79 80 80	72 70 67 69 70 66 74 77	80 78 81 82 82 76 80 79	86 83 72 60 70 73 81 82	73 74 79 82 82 76 77 84	84 80 72 55 81 70 79 83	69 69 75 80 80 76 78 88	70 49 67 49 84 69 74 82	73 71 79 81 81 70 71 87	84 73 90 76 91 73 79 84	69 71 74 77 76 67 68 85	94 84 90 74 87 66 71 82
South Atlantic	78. 8	69. 7	80, 5	72. 3	79.3	72. 0	77. 5	66. 1	77.4	82. 5	73.8	80. 6
Kentucky. Tennessee. Alabama. Mississippi. Arkansas. Louisiana. Oklahoma. Texas.	81 80 81 81 81 81 82 82	66 68 70 74 78 77 70 81	83 84 81 83 85 84 86 85	59 64 80 72 71 83 65 68	84 81 78 80 80 81 83 82	66 71 76 75 56 72 46 42	78 75 76 76 73 75 74 72	64 66 79 69 27 65 17 28	76 74 72 74 67 73 65 63	82 71 83 71 28 63 17 24	75 72 67 69 68 72 67	78 74 77 68 46 63 42 34
South Central	81.6	75. 2	84. 4	67. 8	81.7	53. 5	73.8	40.5	67. 5	41.3	68. 6	49.7
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	86 88 85 76 86 86 84 84 88	74 86 84 79 58 81 63 79 93 92 75	82 90 93 87 80 85 89 88 85 91	48 75 48 59 44 72 42 65 93 88 67	82 86 93 84 74 82 82 84 82 88 78	57 72 53 46 31 69 41 62 85 80 63	76 80 87 80 71 81 77 82 72 80	42 61 36 33 29 67 33 54 72 68 57	74 77 87 81 78 84 77 78 67 74	35 53 39 35 29 69 27 36 59 57	74 77 86 78 76 83 77 79 69 74	37 53 45 35 37 71 33 48 58 53
Western	83. 3	76.8	84.7	61. 5	82. 1	57.9	77.6	48.1	77. 0	44.6	75. 9	45. 8
United States	80. 6	66. 2	83.0	53. 2	82. 5	48. 9	76.0	39. 6	72. 6	43.1	74.0	54,0
	<u>. </u>											

¹ For range States, condition given as reported. Probably relates largely to farm pasture, i. e., range not included.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 295 .- Pasture and range: Condition, 1st of month, United States, 1925-31

		-	Pas	ture			Range ¹					
Year	May	June	July	Aug.	Sept.	Oct.	Мау	June	July	Aug.	Sept.	Oct.
1925	Pct. 82. 2 74. 6 87. 0 71. 3 86. 9 77. 3 78. 8 74. 1 71. 5 66. 2	Pct. 75. 7 77. 0 88. 3 78. 6 87. 2 80. 4 78. 5 77. 6 81. 5 53. 2	Pct. 73. 0 77. 0 92. 8 84. 4 87. 5 74. 6 73. 0 79. 0 60. 5 48. 9	Pct. 69. 5 69. 9 86. 9 85. 6 79. 7 56. 4 63. 7 71. 1 55. 6 39. 6	Pct. 67. 44 78. 2 84. 2 83. 3 67. 1 47. 7 63. 0 67. 6 59. 5 43. 1	Pct. 72.9 83.7 80.1 77.7 70.2 56.1 63.5 67.1 65.6 54.0	Pcl. 84 94 89 85 84 89 84 81 76 80	Pct. 86 95 89 90 87 92 82 89 82 70	Pct. 86 92 94 91 88 88 79 92 78 66	Pct. 83 87 94 90 86 82 73 88 74 55	Pct. 87 84 95 87 83 81 73 84 75 54	Pct. 92 83 94 85 84 82 71 84 76 55

¹ Western division and includes range areas of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas

Table 296.—Hops: Acreage, production, price per pound received by producers Dec. 1, foreign trade, and consumption, United States, 1910-11 to 1934-35

		Average		7.	Fore be	eign trade, eginning Ju	year lly	Con;
Year beginning July	munig Acreage ;		Produc- tion	Price Dec. 1	Imports i	Domes- tic exports 1	Net exports 2	sumption by brew- eries 3
1910-11. 1911-12. 1912-13. 1913-14. 1914-15. 1915-16. 1916-17. 1917-18. 1918-19. 1919-20. 1920-21. 1920-22. 1922-23. 1924-25. 1925-26. 1924-27. 1927-28.	44, 653 43, 960 25, 900 27, 900 27, 000 27, 000 27, 000 18, 440 20, 350 20, 850 24, 600 26, 200	Pounds 1, 187 1, 152 983 829 1, 287 1, 186 1, 087 1, 186 1, 071 1, 360 1, 404 1, 516 1, 246 1, 257	1,000 pounds 52,988 50,595 29,388 21,481 28,320 33,555 29,340 27,744 19,751 27,070 28,573 31,522 30,658	Cents 11.7 12.0 33.3 19.3 77.4 35.7 24.1 8.6 18.8 10.3 21.8 22.1 22.9	1,000 pounds 8,558 2,991 5,382 11,651 676 237 121 (4) 2,696 4,893 893 1,295 761 439 561 470 753 649	1,000 pounds 13,105 12,191 17,991 24,283 16,210 22,410 4,875 3,495 7,467 30,780 22,206 19,522 13,497 20,461 11,388 11,812 8,836	1,000 pounds 4,585 9,235 9,133 18,911 4,570 21,869 4,664 3,411 7,472 28,187 18,226 19,116 12,401 12,401 14,592 11,737 14,592 12,936 11,087 8,198	1,000 pounds 42,437 44,238 43,988 38,839 37,452 41,959 33,481 13,925 6,441 5,989 4,453 4,556 3,126 8,3,149 8,3,256 8,3,149
1929-30 1930-31 1931-32 1932-33 1933-34 1934-35 *	24, 400 19, 500 21, 400 22, 000	1, 360 1, 202 1, 234 1, 094 1, 319 1, 127	33, 195 23, 447 26, 410 24, 058 39, 965 40, 345	11.4 14.8 13.8 6 17.5 6 30.4 6 11.3	928 1, 026 1, 253 4, 572 5, 535	6,793 5,593 3,817 2,431 7,588	5, 901 4, 583 2, 564 7 2, 141 2, 053	2, 627 2, 197 1, 841 7, 767 26, 234

Bureau of Agricultural Economics; compiled from reports of the Division of Crop and Livestock Estimates, Bureau of Foreign and Domestic Commerce, records of the Bureau of Internal Revenue, 1910-11 to 1925-26; annual reports of the Commissioner of Prohibition, 1926-27 to 1929-30; and Commissioner of Industrial Alcohol, 1930-31 to date.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board, Condition of pasture for earlier years in 1928 Yearbook, table 296.

¹ Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1910-26; January and June issues, 1927-34, and official records of the Bureau of Foreign and Domestic Commerce.

² Total exports (domestic plus foreign) minus total imports; beginning 1933-34 domestic exports minus imports for consumption. (See introductory text.)

³ 1920-21 to 1931-32 represent hops used to make cereal beverages containing less than 0.5 percent of alcohol by volume; 1982-33 includes 887,087 pounds of hops used to make cereal beverages containing less than 0.5 percent of alcohol by volume and 6,900,263 pounds fermented malt liquor containing not more than 3.2 percent of alcohol by weight; 1933-34 materials used for fermented liquor.

4 Not over 500 pounds.

Not including 57,936 pounds in 1924, 71,508 pounds in 1925, 960 pounds in 1926, and 6,294 pounds in 1927 used in the manufacture of distilled spirits.

6 Average price, crop marketing season.

7 Net imports.

8 Preliminary.

Table 297.—Hops: Acreage, yield, production, and average price per pound received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harv	ested	Yield per acre			P	roductio	n	Price for crop of—	
State	Aver- age 1927-31	1933	1934 1	A ver- age 1922-31	1933	1934 1	Aver- age 1927-31	1933	1934 1	1933	1934 1
Washington	Acres 2, 620 15, 900		Acres 6, 300 22, 000	Lb. 1,890 1,037	<i>Lb.</i> 1, 600 1, 135	Lb. 1, 650 850	1,000 lb. 4,783 16,537	1,000 lb. 7,840 21,565	1,000 lb. 10,395 18,700	Cents 32. 0 30. 0	Cents 14.0 15.0
California United States_	4,700 23,220	6, 400 30, 300	7, 500 35, 800	1,650	1, 650	1, 500	8, 010 29, 331	10, 560 39, 965	11, 250	30. 0	13.5

¹ Preliminary.

Table 298.—Hops: Acreage, yield per acre, and production in specified countries, ^^2-33 to 1934-35

		Acreage		Yi	eld per a	cre	F	roductio	on .
Country	1932-33	1933-34	1934-351	1932–33	1933-34	1934-35	193233	1933–34	1934-35 1
NORTH AMERICA Canada 2 United States 3 EUROPE	Acres 690 22,000	Acres 984 30, 300	Acres 35,800	Pounds 1, 146 1, 094	Pounds 1,501 1,319	Pounds 1, 127	1,000 pounds 791 24,058	1,000 pounds 1,477 39,965	1,000 pounds 40,345
England and Wales	416, 531 1, 416 4, 361 19, 800 116 23, 631 243 3, 613 72 4, 875	4 16, 895 1, 475 4, 220 23, 638 96 25, 370 358 4, 186 52 5, 424	17, 800 2, 170 5, 004 23, 850 27, 000	5 1, 274 1, 081 392 552 302 702 580 503 458 705	5 1, 432 1, 071 753 634 509 547 771 404 468	1, 630 1, 784 1, 204 605	21, 056 1, 531 1, 711 10, 928 35 16, 583 141 1, 819 33 3, 436	24, 192 1, 580 3, 178 14, 977 12, 915 196 3, 228 21 2, 541	29,008 3,871 6,026 14,427 15,478
Total European countries reporting acreage and production, all years	65, 739	71, 598	75, 824	788	794	907	51,809	56, 842	68, 810
Australia New Zealand	952 355	726 510		1, 277	1, 338		1,669	1,654	
Total countries report- ing acreage and pro- duction, all years Estimated world total, excluding Union of	87, 739	101,898	111,624	865	950	978	75, 867	96, 807	109, 155
Soviet Socialist Republics	98, 655	114,000	124,000	849	930	968	83, 792	106, 000	120,000

Bureau of Agricultural Economies; estimates of the Crop Reporting Board.

¹ Preliminary.
² British Columbia.
³ Principal producing States.
⁴ These figures include the acreage left unpicked, which was estimated at 200 acres in 1932, and 20 acres in

<sup>1933.

§</sup> Yield based on acreage picked.

§ Yield based on acreage and production in minor producing countries for which no data are available.

§ Exclusive of acreage and production in minor producing countries for which no data are available. Bureau of Agricultural Economics; official sources and International Institute of Agriculture except as otherwise stated.

Acreage and production figures are for the harvesting season 1932 to 1934 in the Northern Hemisphere and 1932-33 to 1934-35 in the Southern Hemisphere.

Table 299.—Hops: International trade, average 1925-29, annual 1930-33

					Calend	lar year				
Country	A ve 1925	rage i-29	19	30	19	31	19	32	193	3 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PRINCIPAL EXPORTING COUNTRIES Czechoslovakia United States Yugoslavia France Poland New Zealand Union of Soviet Socialist Re-	9, 427 5, 601 3 552 387	1,000 lb. 1,228 612 231 4,458 447 6	1,000 lb. 19, 890 7, 640 5, 966 2, 670 4, 569 204	1, 099 167 4, 516 475	1,000 lb. 23, 271 3, 797 3, 476 352 2, 573 90	1,000 lb. 0 1,077 185 8,409 148 0	1,000 lb. 12,312 3,007 3,643 84 4,133 200	1,000 lb. 0 1,300 54 3,540 11 1	3, 105 624 2, 640 592	5, 938 5 3, 499 15
publics	² 346 269	208	152	124	1, 001	35	32	28	210	0
Total	48, 172	7, 316	41, 100	6, 400	34, 573	9, 854	23, 457	4, 934	24, 918	9, 458
PRINCIPAL IMPORTING COUNTRIES Germany United Kingdom Irish Free State Belgium Austria Canada Netherlands Brazil Switzerland Sweden Argentina Japan Denmark Italy Union of South Africa Norway Hungary British India	0 2,173 117 387 89 0 0 1 0 0	7,855 5,997 5,300 3,082 2,574 1,273 1,101 1,097 1,081 1,051	2, 498 370 370 216 24 0 0 0 11 5 0 0 85	7, 207 3, 074 3, 386 1, 479 913 1, 263 1, 281 1, 224 1, 158 1, 212 586 513 261	2, 507 00 266 200 125 27 0 0 0 0 0 2 5 5	5, 636 6, 392 8, 701 2, 527 889 1, 237 706 1, 234 1, 170 653 696 1, 155 305 305	0 1 0 0	1, 675 4, 558 5, 016 1, 502 751 642 975 1, 080 944 696 170 252 251 42	7, 481 2, 103 0 942 15 773 13 0 0 0 0 2 24 0 0 0 67 0	696 675 483 823 779 524 416 914 496 185 310 219 64
Total	10, 533	45, 553	8, 958	40, 739	12, 734	35, 907	7, 328	23, 237	11, 421	24, 441

Bureau of Agricultural Economics; official sources except where otherwise noted. Lupulin and hopfenmehl (hop meal) are not included when given separately.

Table 300.—Peanuts: Acreage, yield, production, and weighted average price per pound received by producers, United States, 1919-34

		Peanuts	gathered			Peanuts, all	3
Year	Acreage	Yield per acre	Total quantity gathered	Price 1	Total acre- age	Yield per acre	Total pro- duction
1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1931 1932 1932 1934	1, 005 896 1, 187 958 843	Pounds 691. 9 712. 5 683. 1 630. 0 722. 9 627. 7 729. 1 749. 5 757. 0 706. 1 703. 3 659. 4 773. 7 645. 8 673. 4 676. 7	1,000 pounds 783, 273 841, 474 829, 307 633, 114 647, 762 745, 059 698, 475 631, 823 824, 549 855, 096 747, 085 1, 037, 830 1, 037, 840 1, 037, 840	Cents 9.33 5.26 3.29 4.68 6.78 8.5.68 4.97 8.5.04 8.3.83 8.3.54 8.2.09 8.3.23 8.3.23	1,000 acres 1,830 1,563 1,315 1,786 1,930 2,001 1,862 2,145 2,425 2,425 2,277 2,279	615. 3 608. 4 669. 1 735. 0 661. 2 670. 4 632. 0 724. 4 594. 1 638. 2 643. 2	1,000 pounds

Preliminary.
 International Yearbook of Agricultural Statistics.

From 1919 to 1923, Nov. 15 price.
 Includes peanuts planted in corn and peanuts grazed or hogged off.
 Average of State prices weighted by total production.
 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board. See 1930 Yearbook, table 327, for data for earlier years.

Table 301.—Peanuts: Acreage, yield, production, and weighted average price per pound received by producers, by States, averages, and annual 1933 and 1934

Peanuts gathered

State	A	creage		Yie	ld per a	ere	Total quantity gathered			
	Average, 1927–31	1933	1934 1	Average, 1922-31	1933	1934 1	Average, 1927-31	1933	1934 1	
Virginia North Carolina South Carolina Georgia Florida Tennessee Alabama Mississippl Arkansas Louislana Oklahoma Texas	1,000 acres 149 226 111 358 49 15 230 13 13 12 37	1,000 acres 117 192 14 431 54 10 262 27 25 15 31	1,000 acres 146 240 15 496 65 111 310 29 17 50 158	Pounds 892 1, 010 686 596 617 785 564 614 612 523 656 539	Pounds 950 950 680 590 520 780 565 600 530 650 700 620	Pounds 1, 000 1, 100 640 600 580 770 600 660 475 520 350 325	1,000 pounds 139, 489 231, 181 8, 055 230, 250 29, 184 11, 402 137, 830 8, 249 8, 050 6, 175 22, 886 71, 470	1,000 pounds 111, 150 182, 400 9, 520 28, 080 7, 800 148, 030 16, 200 13, 250 9, 750 21, 700 103, 540	1,000 pounds 146,000 264,000 9,600 297,600 37,700 8,470 188,400 10,800 11,775 8,840 17,500 51,350	
United States.	1, 253	1, 345	1,571	705. 9	673.4	676, 7	904, 222	905, 710	1, 063, 035	

Peanuts produced 2

State	A	creage				Price of nuts gathered for crop of—		
	Average, 1927-31	1933	1934	Average, 1927-31	1933	1934 1	1933	1934 1
Virginia	1,000 acres 152 242 16 624 228 15 367 17 26 16 51	1,000 acres 118 199 18 773 252 10 377 33 35 20 35 207	1,000 acres 147 248 20 779 245 11 443 36 41 22 62 225	1,000 pounds 141,462 247,536 11,449 401,696 134,466 11,572 219,486 10,837 16,388 8,327 30,957 97,960	1,000 pounds 112, 100 189, 050 12, 240 456, 070 131, 040 7, 800 213, 005 19, 800 18, 550 13, 000 24, 500 128, 340	1,000 pounds 147, 000 272, 800 467, 400 142, 100 8, 470 285, 800 23, 760 19, 475 11, 440 21, 700 73, 125	Cents 2.8 2.9 3.7 2.85 2.6 4.0 3.44 2.7 2.8	Cents 3.3 3.4 4.3 3.29 3.6 3.4 4.1 4.3 3.3
United States	1, 945	2,077	2, 279	1, 332, 135	1, 325, 495	1, 465, 870	2.80	3, 23

¹ Preliminary.

Table 302.—Peanuts: Average price per pound, in the shell, received by producers, United States, 1925-26 to 1934-35

Year	Sept.	Oct.	Nov. 15	Dec.	Jan. 15	Feb.	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Aug. 15	Weight- ed aver- age
1925-26 1920-27 1927-28 1922-29 1928-30 1930-31 1931-32 1932-33 1933-34 1934-35	Cents 5.7 5.1 6.0 5.0 4.6 3.9 3.1 2.0 2.5 3.3	Cents 4.7 4.9 4.6 4.4 4.2 2.3 1.6 2.5	Cents 5.1 4.6 4.6 4.8 4.0 3.8 2.2 1.6 2.7	Cents 4.4 4.7 5.2 5.1 3.8 3.2 2.0 1.2 6.3	Cents 4.5 4.9 5.4 5.0 3.7 3.2 2.0 1.3	Cents 4.7 5.4 5.1 3.5 3.6 1.9 1.3	Cents 4.6 5.6 5.4 5.1 3.5 3.7 2.0 1.5 3.2	Cents 5. 1 5. 7 5. 5 5. 2 3. 5 3. 9 1. 9 1. 5 3. 4	Cents 5. 0 5. 9 5. 7 5. 0 3. 7 4. 1 1. 7 2. 1 3. 4	Cents 4.7 6.6 5.6 5.1 3.6 3.9 1.6 2.3 3.3	Cents 5.3 6.4 5.5 4.9 3.7 3.8 1.4 2.5 3.2	Cents 5.3 6.4 5.5 4.7 3.8 1.7 2.6 3.3	Cenis 4.6 5.0 4.9 3.8 3.5 2.1 1.5 2.8

¹ Preliminary.

Includes peanuts planted in corn and peanuts grazed or hogged off.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the marketing season. Data for earlier years in 1928 Yearbook, table 303. Only monthly prices are comparable.

Table 303.—Peanuts: Average price per pound to growers, f. o. b. country shipping point basis, by months, 1924-25 to 1933-34

VIRGINIA-TYPE BUNCH

			•	116011	IV-II	11, 15	011011						
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1924-25	Cents 638 438 434 414 378 418 378 214 154 214	Cents 658 4 4 414 434 334 334 178 236	Cents 534 4 554 478 358 358 3134 1 258	Cents 576 414 414 534 514 514 334 314 114 276	Cents 6 \ 4 \ 4 \ 4 \ 4 \ 4 \ 4 \ 4 \ 4 \ 5 \ 5	Cents 634 436 478 554 5 278 358 158 1	Cents 634 434 474 514 412 274 374 134 114 314	Cents 614 438 434 514 438 3 378 114 158 314	Cents 61/8 5 5 51/2 43/8 31/8 4 11/4 13/4	Cents 534 534 534 534 414 314 4 114 25% 31/1	Cents 514 514 514 514 414 414 314 115 214 334	Cents 478 434 414 414 418 318 176 214 356	
SOUTHEASTERN RUNNERS													
1924-25 1925-26 1926-27	3. 5 3. 0	3.6 3.0 4.2	3. 2 2. 9 4. 1	3, 2 3, 3 4, 8	3. 6 3. 8 5. 4	3. 5 3. 8	3. 2 3. 5	3.0	3.3	3.5	3. 2		
1927-28 1928-29 1929-30	2.8	3.0 3.5 2.2	3. 6 3. 8 2. 0	3. 7 3. 6 2. 0	3. 5 3. 7 2. 0	3. 6 3. 2		2. 6					
1930–31 1931–32 1932–33 1933–34	2.3 1.0 1.0 2.1	2. 2 1. 1 . 8 2. 1	1.0 .6 2.1	.8 .9 2.4	.8 .9 2.5	1. 0 1. 0 2. 6	.9 1.1 2.5	.8 1.6 2.5	. 6 1. 8 2. 5	2.5	2. 5		
	<u> </u>	<u> </u>	SC	UTHE	LASTE	RN SI	ANISI	H	<u> </u>	<u> </u>			
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1928-29. 1930-31. 1931-32. 1932-33. 1933-34.	4. 4 3. 6 4. 6 3. 6 3. 2 3. 2 1. 2 1. 2 2. 4	4. 4 3. 6 5. 2 3. 9 4. 3 3. 2 3. 1 1. 2 1. 1 2. 5	4. 4 3. 4 5. 4 4. 6 4. 4 3. 0 2. 8 1. 2 . 9 2. 5	4. 4 4. 0 5. 9 4. 6 4. 4 2. 6 3. 0 1. 2 1. 1 2. 8	4. 6 4. 9 6. 6 4. 3 4. 2 2. 8 3. 4 1. 2 1. 1 2. 7	4. 4 4. 8 6. 8 4. 1 3. 8 3. 1 1. 4 1. 2 2. 8	4. 2 4. 7 6. 7 4. 0 3. 6 2. 9 3. 6 1. 2 1. 4 2. 6	4. 0 4. 6 6. 2 3. 8 3. 6 2. 8 3. 6 1. 0 2. 1 2. 6	3. 8 5. 2 5. 8 4. 0 3. 5 2. 8 3. 5 2. 4 2. 7	3.8 5.8 5.8 3.6 3.2 3.0 3.2 2.7 2.7	3. 6 5. 5 4. 0 3. 4 3. 2 3. 2 2. 8 1. 3 2. 7 2. 7	4. 0 5. 2 3. 6 3. 6 3. 4 3. 6 1. 5 2. 2 2. 8	
			sc	UTHV	VESTE	RN S	PANIS	H					
1924-25 1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34	4.3	4.3 3.4 4.4 3.3 3.3 2.8 3.1 1.6	4. 5 3. 3 4. 6 4. 0 3. 5 2. 5 2. 5 1. 4 2. 2	4. 2 3. 8 5. 2 4. 5 3. 7 2. 2	4. 5 4. 2 5. 7 4. 0 3. 6 2. 3 3. 1 1. 0 1. 1 2. 7	4. 5 4. 3 5. 7 3. 9 2. 2 3. 1 1. 0 1. 3 2. 7	5. 8 3. 9 2. 1 1. 0 1. 4 2. 7	3. 9	3.7	2.5	4. 0 2. 8 1. 6 2. 4 2. 8	5.0 3.3 3.3 3.5 3.7 1.8 2.5 3.0	

Bureau of Agricultural Economics. Tabulated from peanut market-news reports.

Table 304.—Peanuts: Yearly average price per pound of cleaned and shelled peanuts for prompt shipment, f. o. b. important shipping points, November 1923– October 1934, by crop years 1

VIRGINIA-NORTH CAROLINA SECTION: VIRGINIA, NORTH CAROLINA, AND TENNESSER?

Classification	1923-24	1924–25	1925-26	1926–27	1927–28	1928-29	1929-30	1930–31	1931–32	1932-33	1933–34		
Cleaned Virginias: JumbosFancys	Cents 91/8 75/8 67/8	Cents 11 9½ 7¾	Cents 734 658 534	Cents 838 678 618	738	67/8	Cents 7½ 5¾ 5½ 5½	Cents 8 61/8 51/4	Cents 334 276 258	31/4	Cents 534 456 416		
Shelled Virginias: Extra large No. 1 No. 2	11 976 756	1234 936 5½	936 814 614	838	12 8 576	1076 816 596	57/8	658	3	35%	678 538 5		
SOUTHEASTERN SECTION: GEORGIA, ALABAMA, AND FLORIDA ³													
Shelled: Spanish, No. 1 Spanish, No. 2 Runners, No. 1 Runners, No. 2	11½ 9¾ 8¾ 8½ 7½	77.8 61.4 71.4 53.4	81:1 7 7:7:8 61:2	81/3	578	634 558 614 514	534 434 431 4	534 5 51,2 45,8	25 6 21,4 23 6 21,4	31/8 31/4	51/8 43/4 47/8 41/2		
sou	THWE	STERN	SEC	TION:	TEX.	AS AN	D OK	LAH0	MA 4				
Shelled: Spanish, No. 1 Spanish, No. 2	11 ³ 8 958		878 7) i	1014 812			6½ 5¾s	612 578	3 25s	35 s 33 s	5¾ 5		

1 Crop year extends from November to next October in the Virginia-North Carolina section; farther south

it begins earlier.

Shipping points in 1933. Virginia: Boykins, Courtland, Disputanta, Emporia, Franklin, Petersburg, Stony Creek, Suffolk, Wakefield, Walters, Waverly, and Zuni. North Carolina: Ahoskie, Edenton, Elizabethtown, Enfield, Lewiston, Plymouth, Scotland Neck, Tarboro, Williamston, and Wilmington. Tennessee: Nashville and Johnsonville.

Shipping points in 1933. Georgia: Albany, Americus, Arlington, Ashburn, Bainbridge, Blakely, Cairo, Camilla, Coleman, Columbus, Cordele, Dawson, Donalsonville, Edison, Fitzgerald, Fort Gaines, Leary, Macon, Moultrie, Pelham, Savannah, Shellman, Tifton, Wrens, and Valdosta. Alabama: Andalusia, Brundidge, Dothan, Elba, Enterprise, Eufaula, Headland, New Brockton, Ozark, Samson, and Troy. Florida: Greenwood, Live Oak, Malone, and Marianna.

Shipping points in 1933. Texas: Abilene, Carbon, De Leon, Denison, Dublin, Fort Worth, and Houston. Oklahoma: Durant and Hugo.

Bureau of Agricultural Economics; based on returns from cleaners, shellers, and brokers,

Table 305.—Peanuts: International trade, average 1925-29, annual 1931-33

				Calend	ar year			
Country	Average	1925-29	19	31	19	032	198	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES British India Senegal China Nigeria French possessions—India Gambia Netherlands Indies Mozambique Tanganyika Anglo-Egyptian Sudan French Guiana Spain Brazil	951, 057 408, 762 266, 702 4 251, 847 134, 328 61, 251 54, 487	49 914	2 1, 005, 850 723, 145 357, 815 149, 657 39, 008 58, 278 6, 877 6, 230	2 4 1, 142 0 	83, 585 48, 420 73, 595 35, 556 2, 886 4, 476 1, 815	183 0 0 575 369 0 0 0	390, 428 458, 315 	527 0 0 82 0 0 0
Total	3, 501, 480	43, 138	3, 944, 949	2, 075	2, 724, 232	1, 127	2, 227, 117	529
PRINCIPAL IMPORTING COUNTRIES France. Germany. United Kingdom Italy Netherlands. United States Belgium Denmark. British Malaya. Canada. Japan. Sweden. Algeria. Egypt. Tunis. Union of South Africa. Argentina. Australia 2 Philippine Islands Polend. Yugoslavia. Total.	0 99 3, 278 4, 559 244 0 12, 361 13, 361 313 2, 599 0 401 112 0 0		0 41 2,937 1,842 547 0 2,238 0 150 0 129 1,146 0 337 555 0 665 0	269, 313	0 0 24 1, 811 7, 107 1, 606 0 3, 376 0 1, 203 1, 203 1, 203 100 0 0 177 0 0 0 0 0 177 0 0 0 0 0 0 0	140, 027 170, 837 561 48, 262 53, 705 18, 384 22, 860 31, 590 2, 536 13, 440 4, 607 8, 989	0 0 22 1, 327 1, 426 641 0 2, 860 0 15 67 4 0 191 433 0 0	179, 528 240, 023 75, 200 74, 544 29, 136 27, 318 26, 263 2, 774 5, 395 5, 410 11, 301 11, 301

Preliminary.
 International Yearbook of Agricultural Statistics.
 Does not include Manchuria after June 1932.

⁴⁻year average.
5 Java and Madura only.

Bureau of Agricultural Economics; official sources except where otherwise noted. Includes shelled and unshelled, assuming the peanuts to be unshelled unless otherwise stated. When shelled nuts were reported, they have been reduced to terms of unshelled at the ratio of 3 pounds unshelled to 2 pounds of shelled.

Table 306.—Peanut oil: Peanuts crushed and crude and virgin oil produced in the United States, 1923-24 to 1933-34

		Pear	uts crus	hed ¹			O	il produc	ed	
Year	Octo- ber-De- cember	Janu- ary- March	April- June	July- Sep- tember	Total	Octo- ber-De- cember	Janu- ary- March	April- June	July- Sep- tember	Total
1923-24 1924-25 1925-28 1925-28 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1931-32 1933-34 ²	1,000 pounds 6, 164 17, 668 17, 134 10, 576 21, 810 14, 740 31, 598 22, 744 15, 376 19, 944 11, 821	1,000 pounds 4,676 24,678 17,880 11,143 24,168 19,596 50,888 23,940 14,874 13,432 10,487	1,000 pounds 5, 471 16, 893 10, 668 6, 321 8, 177 10, 392 25, 606 17, 950 12, 750 20, 260 12, 193	1,000 pounds 1, 928 9, 096 4, 389 6, 966 6, 661 11, 320 12, 672 4, 996 8, 464 11, 792 8, 118	1,000 pounds 18, 239 68, 335 50, 071 35, 006 60, 816 56, 048 120, 764 69, 630 51, 464 65, 428 42, 619	1,000 pounds 1,406 3,804 3,827 2,544 5,144 3,569 6,723 5,139 3,320 4,597 2,658	1,000 pounds 1,122 5,265 4,001 2,446 5,324 4,463 11,192 5,214 3,415 2,884 2,578	1,000 pounds 1,328 4,091 3,093 1,400 1,920 2,331 6,413 4,061 2,990 4,412 2,818	1,000 pounds 438 1,974 1,006 1,600 1,626 2,614 2,751 1,134 1,843 2,609 1,738	1,000 pounds 4,294 15,134 11,927 7,990 14,014 12,977 27,079 15,548 11,568 14,502 9,792

¹ Quantities reported in terms of hulled have been converted to in-the-hull basis by multiplying by 1.5. 2 Preliminary.

Table 307.—Peanut oil: International trade, average 1925-29, annual 1930-33

	Calendar year												
Country	Average	1925-29	19	30	19	31	19	32	1933 1				
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports			
PRINCIPAL EXPORTING COUNTRIES France. China. Germany. Netherlands Indies. Denmark.	70.538	1,000 pounds 10,793 0 8,040 1,676 1,203	1,000 pounds 69,791 110,880 86,785 4,703 9,963	1,000 pounds 14, 374 0 3, 378 2, 438 1, 846	1,000 pounds 98, 224 108, 591 47, 350 4, 796 11, 480	1,000 pounds 6,751 0 3,547 2,354 1,266	1,000 pounds 83, 819 43, 206 17, 836 9, 453 9, 660	1,000 pounds 8,171 0 1,458 1,879 356	1,000 pounds 97,334 40,735 21,302 210,394 17,406	1,000 pounds 10, 637 0 730 2 35 1, 165			
Total	208, 517	21,712	282, 122	22, 036	270, 441	13, 918	163, 974	11,864	187, 072	12, 567			
PRINCIPAL IMPORT- ING COUNTRIES Netherlands United Kingdom	31,567 21,326	58, 871 37, 167	34, 939 6, 895	34, 287 49, 820	36, 479 10, 667	9, 973 42, 291	32, 778 3, 721	1,773 11,189	41, 586	708			
Algeria Canada Italy Belgium Norway Sweden United States Tunis Philippine Islands Czechoslovakia Finland Morocco	364 0 114 4,343 0 2,177 0 0 0 386	29, 416 20, 992 13, 388 9, 717 7, 782 7, 275 4, 427 4, 283 4, 163 3, 360 2, 367 1, 878	1,402 0 148 2,310 78 1,692 0 0 783 0	45, 122 63, 512 1, 211 22, 883 4, 422 9, 353 15, 565 1, 694 3, 714 5, 650 2, 774 7, 267	13,822 0 130 3,409 0 1,388 0 0 739 0	57, 594 54, 347 1, 142 22, 907 3, 804 9, 081 14, 886 4, 594 5, 377 2, 084 6, 430	1, 297 0 85 3, 854 660 183 0 0 0 51 0 0	56, 585 5, 962 346 16, 161 1, 065 5, 024 1, 489 2, 300 5, 758 9, 607 865 3, 522	0 23 1,981 609 36 0 0 284 0	65, 119 31, 991 14, 283 921 6, 062 1, 318 1, 319 6, 226			
Total	60, 277	205, 086	48, 247	267, 274	53, 634	240, 426	42, 629	121, 646	44, 519	133, 523			

Bureau of Agricultural Economics; compiled from reports of the Bureau of the Census on animal and vegetable fats and oils.

¹ Preliminary. ² Java and Madura only.

Bureau of Agricultural Economics; official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

Table 308.—Peas, dry field: Acreage, yield, and production, by States, average 1928-31, and annual 1933 and 1934

	Acrea	ge harve	sted	Yie	ld per ac	re	Production			
State	A verage 1928–31	1933	1934 2	Average 1928-31	1933	1934 2	Average 1928-31	1933	1934 2	
Michigan	1,000 acres 25 28 27 58 52	1,000 acres 20 18 21 86 55 89	1,000 acres 15 20 22 85 37 120	Bushels 12. 4 15. 2 16. 0 19. 8 11. 5	Bushels 9.0 17.0 14.0 18.5 11.0 18.6	Bushels 11. 0 15. 5 15. 0 17. 0 7. 5 18. 5	1,000 bushels 324 439 423 1,136 599	1,000 bushels 180 306 294 1,591 605 1,655	1,000 bushels 165 310 330 1,445 2,220	
6 States 3	190	289	299	15.4	16.0	15. 9	2, 922	4, 631	4, 748	

¹ These figures are for the States in which peas are grown commercially in material quantities and do not include cowpeas.

² Preliminary.

Table 309.—Clover seed (red and alsike), sweetclover seed, lespedeza (Japan clover) seed, and alfalfa seed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

CLOVER SEED (RED AND ALSIKE)

	Acreage harvested					acre	1	1	Price for crop of—		
State	Average, 1927-31	1933	1934 1	Aver- age, 1924- 31	1933	19341	A verage, 1927–31	1933	1934 1	1933	19341
New York. Pennsylvania Ohio Indiana Illinois. Michigan Wisconsin Minnesota Iowa Missouri North Dakota Nobraska Kansas Maryland Virginia Kentucky Tennessee Idaho Wyoming Colorado Oregon	166, 400 149, 600 117, 900 73, 400 121, 200 51, 800 2, 000 14, 860 10, 900 2, 6, 667 4, 600 31, 600 2, 2, 533 2, 1, 875 18, 000	116, 000 110, 000 156, 000 70, 000 187, 000 187, 000 1, 100 12, 000 11, 100 3, 000 2, 500 1, 400 14, 000	18, 000 292, 000 176, 000 158, 800 62, 000 77, 000 35, 000 3, 000 3, 000 21, 000 22, 000 22, 000 22, 000	1. 6 1. 1 . 9 1. 1 1. 4 1. 5 1. 9 1. 0 1. 4 2 2. 3 1. 6 1. 7	1. 7 1. 3 1. 0 1. 1 1. 4 1. 4 1. 4 1. 4 1. 4 1. 4 1. 1 1. 6 1. 6 2. 0 2. 0 3. 5 3. 3	1. 6 1. 0 2. 5 2. 5 1. 5 1. 2 1. 5 1. 2 1. 5 2. 5 2. 5 3. 0	235, 500 185, 500 171, 000 155, 800 182, 500 132, 140 66, 720 4, 500 24, 340 17, 120 210, 300 9, 120 137, 480 27, 740	189, 800 110, 600 215, 600 218, 400 112, 200 187, 200 1, 500 21, 600 1, 500 4, 800 4, 800 4, 900 4, 900 46, 200	28, 800 292, 000 141, 100 49, 600 115, 500 24, 600 13, 500 4, 500 2, 400 1, 500 1, 500 1, 500 1, 500 66, 000	8. 80 6. 60 6. 90 6. 80 6. 20 6. 20 6. 50 6. 50 7. 90 6. 60 5. 80 6. 60 6. 60	Dol. 12. 70 15. 000 11. 100 11. 10 11

¹ Preliminary.

For Oregon 5,000 acres and 55,000 bushels were reported for 1934; data for previous years not available. Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

² Short-time average.

Table 309.—Clover seed (red and alsike), sweetclover seed, lespedeza (Japan clover) seed, and alfalfa seed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934—Continued

SWEETCLOVER	SEED
-------------	------

	Acrea	ge harves	ted	Yield	per	acre	P	roduction	1	Pric crop	e for of—
State	Average, 1927-31	1933	1934 1	A ver- age, 1924- 31	1933	19341	Average, 1927-31	1933	1934 1	1933	1934
Dhio ndiana Illinois Wisconsin Minnesota Owa Missouri North Dakota South Dakota Nebraska Kansas Montana Colorado United States	3, 000 15, 400 11, 200 13, 600 4, 600 52, 200 22, 640 19, 440 5, 100 5, 200	Acres 5, 000 2, 000 16, 000 3, 000 73, 000 10, 000 2, 000 42, 000 18, 400 21, 000 11, 000 6, 000 3, 500	2,000 35,700 3,700 21,000 6,000	4. 3 4. 0 3. 3 4. 2 3. 7 3. 9 4. 0 3. 8 5. 0	3. 5 4. 0 3. 0 3. 1 2. 8 2. 4 3. 7 3. 8 3. 5 3. 5	4.50 2.75 2.59 3.77 2.77	182, 100 54, 280 14, 300 247, 900 195, 980 92, 220 76, 620 20, 800 27, 000	Bu 12,500 4,000 40,000 10,500 292,000 6,200 117,600 44,200 77,700 41,800 12,200	73, 500 16, 200 13, 800 7, 000	3. 00 2. 80 2. 70 1. 95 2. 40 2. 85 2. 25 1. 95 2. 50 2. 20 3. 10 2. 55	4. 36 4. 36 4. 46 3. 76 3. 9 4. 10 3. 6 3. 5 3. 5 3. 5 3. 5 3. 5
			ZA (JA	PAN	CLO) SEED		1		
Virginia North Carolina Kentucky Tennessea Mississippi Louisiana United States ³			50,000 91,000 83,000		4.5 8.0 9.5 4.0 4.0					1.2	1.6
			ALF	LFA	SEE	D					
Ohio Indiana Michigan Michigan Michigan Mimesota Iowa North Dakota South Dakota Nebraska Kansas Oklahoma Texas Montana Idaho Wyoming Colorado New Mexico Arizona Utah Oregon California	19, 120 12, 240 37, 040 23, 600 31, 180 12, 580 3, 540 38, 000 29, 600 7, 960 9, 820 4, 380 17, 200 49, 800 29, 600 9, 820 4, 380 29, 600 9, 820 4, 380 29, 600 29, 600 9, 820 4, 800 29, 600 20, 600 9, 820 4, 800 20, 600 20, 60	7, 500 15, 000 35, 000 47, 000 60, 000 12, 200 2, 000 31, 000 15, 000 10, 000 14, 000 14, 000 22, 000	10, 000 20, 000 40, 000 15, 000 11, 300 14, 000 42, 000 48, 000 10, 800 2, 000 10, 800 10, 900 11,	21.7 1.9 2.3 2.3 3.0 2.3 3.4 0.3 3.4 0.3 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3	1.5 1.0 1.4 2.0 3.3 3.3 3.3 2.0 2.5 3.0 5.0 2.5 2.5 2.5	1.35 1.23 1.40 1.22 2.50 2.85 2.85 2.85 2.85 2.85 2.85 2.85 2.85	2 4, 400 2 17, 000 28, 060 70, 500 54, 889, 840 10, 929 85, 920 81, 120, 000 21, 720 79, 600 211, 160 9, 389 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9	81, 000 11, 200 49, 000 94, 000 40, 300 62, 000 112, 000 37, 500 9, 600 70, 000 33, 000	48, 000 52, 000 21, 000 11, 300 19, 700 92, 400 120, 000 29, 200 6, 000 98, 800 13, 500 12, 000 5, 900 85, 400 10, 500	6.70 8.60 7.00 6.20 6.20 6.00	0 10. 8 0 10. 10. 10. 10. 10. 10. 10. 10. 10. 10
			.	-	-	-	-	1, 025, 700		_	

Preliminary.
 Short-time average.
 Bushels of 25 pounds, although the weight varies in different States.
 Dec. 1 price.
 Additional quantities produced in Missouri and Illinois but data insufficient for preparing estimates. Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 310 .- Clover seed, red: Average price per bushel received by producers. United States, 1925-26 to 1934-35

	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weight- ed aver- age
1925-20 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 13. 42 16. 63 16. 78 16. 26 12. 48 11. 65 7. 99 5. 34 5. 83 10. 17	17. 21 15. 67 16. 49 10. 68	17. 85 15. 07 16. 68 9. 75 12. 35 6. 97 4. 61 6. 00	17. 89 15. 33 16. 81 9. 94 11. 76 7. 34 4. 67	19. 07 15. 97 16. 96 9. 92 11. 78 7. 27 4. 73	11. 64 7. 31 4. 78	21. 16 16. 90 17. 54 10. 03 11. 54 7. 58 4. 95	22. 75 16. 92 17. 96 10. 23 11. 59 7. 69	22. 45 17. 04 17. 90 10. 23 11. 80 7. 58 5. 46	22. 07 16. 89 17. 62 10. 40 11. 84 7. 19	20. 69 16. 42 17. 17 10. 34 10. 76 6. 77 6. 04	15, 90 16, 30 11, 01 10, 08 5, 79 6, 28	18. 20 15. 98 16. 89 10. 45 11. 55 7. 27 5. 01

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 334. Only monthly prices are comparable.

Table 311.—Alfalfa seed: Average price per bushel received by producers, United States, 1925-26 to 1934-35

	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weight- ed aver- age
1926-26. 1926-27. 1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-36.	Dol. 11. 41 9. 79 10. 17 10. 24 14. 68 12. 10 9. 98 6. 53 7. 10 6. 77	9. 37 9. 62 10. 38 13. 52 11. 91 9. 69 5. 98	9. 17 9. 69 10. 25 12. 85 11. 36	9, 78 10, 71 11, 68 10, 68 6, 94 5, 25 5, 52	9. 42 9. 45 11. 96 10. 83 10. 18 6. 58 5. 19 5. 12	9. 48 9. 76 12. 69 11. 10 9. 86	10. 12 9. 55 12. 67 11. 15 9. 97 6. 36 5. 68 5. 32	10. 33 9. 74 13. 19 11. 16 10. 20 6. 58 5. 89	10. 50 10. 11 13. 84 11. 97 9. 91 6. 70 5. 93	11. 04 10. 35 14. 19 11. 97 9. 89 6. 79	10. 63 10. 52 14. 69 12. 38 9. 70 6. 58 6. 64	10. 62 10. 91 14. 91 12. 05 9. 64 6. 47 6. 82	10. 12 9. 67 11. 70 12. 01 10. 75 7. 34 5. 67

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; average for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 333. Only monthly prices are comparable.

Table 312.—Timothy seed: Acreage, yield, production, and weighted average price per bushel received by producers, by States, averages, and annual 1933 and 1934

	Acrea	ge harves	ted	Yield	per	acre	F	roduction	1		e for of
State	A verage, 1927–31	1933	1934 1	A ver- age, 1924- 31	1933	1934 1	A verage, 1927–31	1933	1934 1	1933	19341
Pennsylvania Ohio Indiana Illinois Wisconsin Minnesota Iowa Missouri North Dakota South Dakota United States	Acres 6, 200 39, 600 12, 600 75, 800 11, 600 36, 180 197, 280 87, 600 2, 980 7, 900	Acres 4, 400 21, 000 14, 000 57, 000 23, 000 110, 000 48, 000 1, 400 (2) 281, 100	13, 000 11, 000 22, 800 500 17, 000 36, 000 20, 000 1, 000 (²)	4.0 3.3 4.0 4.0 3.2 2.9	Bu. 2. 8 3. 3 2. 7 2. 6 3. 0 3. 4 3. 1 2. 9 1. 5	Bu. 2.3 2.5 2.6 1.5 3.2 3.5 1.75 1.0 2.07	Bu. 25, 460 164, 060 45, 620 274, 800 42, 760 144, 480 833, 440 309, 420 8, 440 25, 520 1, 881, 800	6, 900 78, 200 841, 000 139, 200 2, 100	28, 600 34, 200 1, 600 59, 500 63, 000 1, 000	1. 95 2, 15 1. 95 2. 20 1. 80 2. 00 1. 60 1. 80	7. 60 7. 10 7. 20 6. 40 6. 70 5. 90 5. 90 5. 70

¹ Preliminary. ² Less than 500 acres.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 313.—Timothy seed: Average price per bushel received by producers, United States, 1925-26 to 1934-35

Year	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weight- ed aver- age
1925-26 1926-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 3. 36 2. 68 2. 06 1. 86 1. 69 2. 51 1. 38 . 91 1. 65	2. 55 1. 66 1. 91 1. 88 2. 62 1. 43 . 93 1. 83	1. 58 2. 08 2. 02 3. 06 1. 44 . 88 2. 13	2. 46 1. 61 2. 20 2. 17 3. 11 1. 46 . 92 2. 20	1. 73 2. 20 2. 25 3. 09 1. 54	2. 62 1. 78 2. 41 2. 46 3. 29 1. 53 . 98 2. 13	1. 92 2. 49 2. 37 3. 32 1. 62	2, 69 1, 86 2, 62 2, 51 3, 58 1, 70 1, 01	Dol. 3. 47 2. 76 1. 88 2. 67 2. 67 3. 61 1. 59 1. 02 2. 96	2. 69 1. 96 2. 65 2. 69 3. 43 1. 61 1. 10	2. 76 2. 08 2. 56 2. 65 3. 16 1. 39 1. 10	2. 58 2. 07 2. 36 2. 53 2. 33 1. 20 1. 38	2.73 1.84 2.17 1.97 2.50 1.39

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by production to obtain a price for the United States; averages for the year obtained by weighting State price averages for the crop-marketing season. Data for earlier years in 1928 Yearbook, table 335. Only monthly prices are comparable.

Table 314.—Field seeds: Average price per 100 pounds, specified markets, 1925-34

Sea- son, Janu- ary- May	Alfalfa, Kansas City	Alsike clover, Chi- cago	Red clover, Chi- cago	Ken- tucky blue- grass, Kansas City	Timo- thy, Chi- cago	Sweet- clover, Minne- apolis	Meadow fescue, Kansas City	Lespe- deza, Louis- ville	German millet, Kansas City	Amber sorgo, Kansas City	Hairy vetch, Balti- more	Sudan grass, Kansas City
1925 1926 1927 1928 1929 1930 1931 1932 1933	24. 81 22. 56 13. 65	Dol. 23. 38 27. 55 37. 42 27. 80 34. 65 19. 90 23. 88 15. 05 11. 95 16. 25	Dol. 33. 97 33. 67 42. 54 30. 65 33. 63 21. 35 25. 04 16. 35 11. 40 14. 75	Dol. 28.00 38.05 20.53 19.72 31.31 20.00 34.37 13.45 8.35	Dol. 6. 79 7. 94 5. 97 4. 74 6. 54 8. 06 10. 55 4. 30 3. 25 8. 50	Dol., 12, 34, 9, 65, 13, 65, 8, 50, 8, 50, 9, 22, 5, 50, 4, 50, 6, 50	Dol. 9. 42 15. 49 25. 00 14. 70 16. 01 10. 00 10. 76 5. 50 4. 15 7. 05	Dol. 19. 50 15. 74 8. 57 17. 65 20. 43 14. 37 14. 69 8. 30 7. 50 5. 00	Dol. 4.98 3.10 3.25 2.45 3.44 3.45 3.69 1.80 1.60 3.35	Dol. 2.24 2.72 3.10 1.99 2.09 3.47 2.81 1.20 1.15	Dol. 8. 82 12. 25 15. 10 9. 72 9. 30 9. 00 8. 45 7. 50 7. 60 8. 75	Dol. 5. 68 4. 31 6. 68 3. 62 5. 80 5. 40 7. 38 1. 75 2. 10 5. 50

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the various markets. These prices are the average wholesale selling prices for high-quality seed.

Table 315.—Field seeds: Average wholesale price per 100 pounds at specified markets, by months, 1925-34

	Al	falfa, cor	nmon, K	ansas C	ity		Alsike	clover, C	Chicago	
Season	Jan.	Feb.	Mar.	Apr.	May	Jan.	Feb.	Mar.	Apr.	May
1925	Dollars 22, 00 20, 00 19, 50 21, 50 26, 00 23, 55 22, 90 13, 50 12, 00	Dollars 22, 10 20, 00 20, 00 22, 00 26, 00 24, 75 22, 50 13, 50 13, 50	Dollars 23. 10 20. 00 20. 00 22. 00 26. 20 25. 25 22. 50 13. 50 13. 25	Dollars 23. 50 21. 00 20. 00 22. 00 26. 00 25. 25 22. 50 13. 80 13. 50	Dollars 23. 50 21. 00 20. 00 22. 00 26. 00 25. 25 22. 50 14. 00 13. 25	Dollars 21. 75 26. 10 36. 00 28. 35 34. 65 20. 10 23. 70 15. 50 11. 70 16. 50	Dollars 22. 35 27. 25 37. 95 28. 10 33. 90 19. 90 24. 00 15. 30 11. 80 16. 50	Dollars 23. 05 27. 85 39. 45 27. 80 35. 15 19. 50 23. 75 15. 00 11. 95 16. 50	Dollars 24. 75 28. 20 38. 85 27. 70 35. 45 20. 10 23. 20 14. 75 12. 00 16. 25	Dollars 25. 00 28. 40 34. 85 27. 10 34. 15 19. 90 22. 75 14. 65 12. 30 15. 50
		Red c	lover, C	nicago			Sweetcle	ver, Mi	nneapolis	
1925	34. 20 32. 15 38. 60 32. 50 33. 00 21. 20 26. 00 16. 80 11. 70 15. 00	36. 00 36. 50 42. 30 30. 95 33. 20 21. 35 26. 05 16. 50 10. 55 15. 00	34. 30 34. 70 45. 00 29. 95 34. 40 21. 00 25. 45 16. 25 10. 85 15. 00	33. 35 34. 00 44. 25 30. 20 34. 35 21. 60 24. 15 16. 15 11. 60 14. 75	32.00 34.00 42.55 29.70 33.20 21.60 23.55 16.10 12.30 14.00	13. 00 9. 00 14. 35 8. 75 8. 50 9. 50 5. 75 4. 50 6. 50	13. 00 9. 45 14. 35 8. 70 8. 50 9. 40 5. 50 4. 50 6. 50	12. 75 9. 85 14. 00 8. 45 8. 50 8. 00 9. 15 5. 50 4. 50 6. 50	11. 95 9. 95 13. 10 8. 45 8. 50 8. 00 9. 05 5. 50 4. 50 6. 75	11. 00 10. 00 12. 50 8. 40 8. 50 9. 00 5. 25 4. 50 6. 25
	Ken	tucky bl	uegrass,	Kansas	Cit y		Time	othy, Ch	icago	
1925 1926 1927 1928 1929 1930 1931 1932 1932 1933 1934	28. 00 40. 00 20. 25 19. 50 31. 50 20. 00 34. 10 13. 00 8. 35 13. 25	28. 00 39. 25 21. 00 19. 50 30. 75 20. 00 34. 25 13. 25 8. 25 13. 25	28. 00 37. 00 21. 00 19. 60 31. 30 20. 00 34. 50 13. 60 8. 30 13. 50	28. 00 37. 00 20. 40 20. 00 31. 50 20. 00 34. 50 13. 75 8. 00 13. 50	28. 00 37. 00 20. 00 20. 00 31. 50 20. 00 34. 50 13. 75 8. 75 13. 50	6. 95 8. 10 6. 05 4. 75 7. 10 10. 20 4. 65 3. 20 9. 00	6. 70 8. 10 6. 05 4. 55 6. 70 7. 20 10. 45 4. 40 3. 15 9. 00	6. 50 7. 95 5. 85 4. 35 6. 62 7. 30 10. 45 4. 25 3. 00 8. 50	6. 85 7. 80 5. 95 4. 75 6. 45 8. 25 10. 70 4. 05 3. 20 8. 25	6. 95 7. 75 5. 95 5. 30 6. 15 10. 45 10. 95 4. 00 3. 80 7. 75

Bureau of Agricultural Economics. Compiled from weekly reports to the Bureau from wholesale seedsmen in the various markets. These prices are the average wholesale selling price for high-quality seed.

Table 316.—Forage-plant seeds: Imports into United States, 1924-25 to 1933-34 SEEDS PERMITTED ENTRY UNDER FEDERAL SEED ACT

W				Ye	ar begin	ning Ju	ıly—			-
Kind of seed	1924-25	1925-26	1926–27	1927-28	1928-29	1929-30	1930–31	1931–32	1932–33	1933–34
Alfalfa	1,000 lb. 4,783 1,150	1,000 lb. 4,548 284	1,000 lb. 5,134 882	1,000 lb. 782 1,102	1,000 lb. 1,146 1,228	1,000 lb. 337 608	1,000 lb. 233 985	1,000 lb. 353 366	1,000 lb. 41 191	1,000 lb. 47 128
Kentucky bluegrass. Awnless bromegrass. Alsike clover. Crimson clover. Red clover. White clover. Clover mixtures. Meadow fescue.	10, 425 4, 834 6, 541 1, 227 13	1,666 122 13	22 4, 163 2, 385 10, 816 975 24 16	7, 609 1, 346 4, 641 1, 778 41	5 4, 798 3, 395 7, 547 2, 410 250 8	7, 220 3, 099 2, 154 2, 278 32 1	4 94 3,079 2,805 768 15	1, 831 31 893 16	2 685 1,943	1, 977 11 962 11
Foxtail millet Grass mixtures Orchard grass Winterrape English ryegrass Italian ryegrass Timothy	992 4, 345 1, 335 831	253 6, 526 2, 302 1, 683 3	260 6, 788 1, 203 833 45	30 173 6, 438 1, 083 456 23	108 5 2,377 6,982 1,180 300	5 318 6,681 937 244 37	342 5, 119 824 200	3 1 3, 762 646 75	1 19 5, 174 463 42	5 5, 281 532 26
Hairy vetch Hungarian vetch Spring vetch	2, 068 1, 266	3, 986 1, 603	2, 124 76 992	3, 895 563	4,064	2, 483 821	701	2, 365 202	2, 894 96	3, 141 270 718
SEEDS N	or su	BJECT	г то т	THE F	EDER	AL SE	ED AC	T		,
Bentgrass Biennial white sweetclover Biennial yellow sweetclover Bur clover	258 3, 493 52 5	1 328 5, 879 502	537 4,130 174	554 3,379 116	649 1, 464 29	890 206 3	213	327	52	59 1 4
Crested dogtail Chewings fescue Other fescues 2 Carpet grass Dallis grass Rescue grass	44 842 793	39 655 1,043 15 1	18 954 384 3 1	55 1,107 427 14 16	79 1, 453 671 7 12	22 988 624 7 27	1,018 379 12 38 2	28 1,030 573 17 19 5	16 920 307 1 18 5	1,077 169 2 6
Rhodes grass	10 40	21 75	10 170	38 286	24 306	16 347	12 378 449	554 79	427	4 2 426 103
Velvet grass Wood meadow grass Small-flowered melilot	26	8 40	15 24	39 	28 	42 21 169	13	35 	9 6 	9
Japanese millet		3 4	2 3	146	141 2 2	5 10 1	6	3 2	10	2 1
Other forage crop	7	105	3	31	15	7	10	33	14	2, 758

In addition to this amount, 15,700 pounds were imported subject to the Federal Seed Act, previous to May 28, 1926.
 All other fescues except meadow fescue and Chewings fescue.
 In addition to this amount, 3,200 pounds were imported subject to the Federal Seed Act, previous to May 28, 1926.

Division of Seed Investigations, Bureau of Plant Industry.

Table 317.—Sunflower seed: Production, by States, and imports, average 1924-33, annual 1924-34

State	Aver- age 1924-33	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934 1
California Illinois Missouri	1,000 lb. 2,208 3,514 2,093	1,000 lb. 800 3,723 3,300	1,000 lb. 1,000 2,993 3,520	1,000 lb. 1,000 3,012 3,995	1,000 lb. 3,000 4,347 3,053	1,000 lb. 4, 225 9, 824 2, 109	1,000 lb. 4,500 8,900 2,700	1,000 lb. 250 190 450	1,000 lb. 1,700 1,000 250	1,000 lb. 2,800 850 750	1,000 lb. 2,800 300 800	1,000 lb. 2,700 1,600 900
Total Imports for con- sumption	7, 814 805	7,823 1,089	7, 513 431	8,007 249	10, 400 987	16, 158 2, 300	16, 100 1, 621	890 248	2,950 409	4, 400 598	3, 900 121	5, 200 276
emmberou	000	T, 009	431	249	1 901	2,300	1,021		105	330	121	1 270

¹ Preliminary.

Bureau of Agricultural Economics. Production figures compiled from dealers' and growers' reports; imports from Bureau of Foreign and Domestic Commerce, Department of Commerce.

STATISTICS OF BEEF CATTLE, HOGS, SHEEP, HORSES, AND MULES

TABLE 318.—Cattle and calves: Number on farms and farm value per head in the United States, Jan. 1, 1900-1935

			han milk ows			Other th	
Year	All 1	Number ²	Farm value per head Jan. 1 3	Year	All 1	Number 2	Farm value per head Jan. 1 ³
1900 4 1900. 1901. 1902. 1903. 1904. 1906. 1907. 1908. 1909. 1909. 1910. 1911. 1911. 1912. 1913. 1914. 1916. 1916. 1917. 1918.	62, 872 62, 373 60, 794 59, 634 61, 808 57, 940 56, 219 55, 022	Thou- sands 50, 584 42, 265 45, 023 46, 428 47, 715 47, 678 47, 161 45, 595 44, 723 42, 857 41, 480 41, 178 39, 734 37, 975 36, 710 37, 307 39, 807 43, 006 46, 330 48, 992 50, 208	Dollars 23. 60 18. 83 17. 73 17. 44 15. 42 14. 98 16. 16 15. 96 16. 53 18. 02 19. 41 20. 03 24. 91 29. 42 31. 54 31. 69 33. 91 38. 63	1919 1920 1921 1921 1922 1923 1924 1925 1925 1926 1927 1928 1929 1930 1931 1931 1932 1932 1933 1934 1935	Thou-sands 70,261 66,639 70,325 68,633 67,384 65,832 67,760 63,115 59,977 57,528 56,701 57,878 63,896 59,730 60,987 62,656 65,764 68,290 60,667	Thou- sands 49, 042 46, 964 48, 870 47, 193 46, 841 45, 285 43, 544 43, 115 40, 610 35, 369 34, 572 35, 548 45, 397 36, 820 37, 411 38, 181 40, 419 42, 105 35, 567	Dollars 41, 79 40, 01 28, 05 21, 899 23, 41 23, 03 22, 57 26, 40 28, 12 36, 30 42, 03 42, 03 44, 03 44, 14, 11 11, 12, 77 14, 50

Bureau of Agricultural Economics; estimates of the Crop Reporting Board

¹ Figures for 1900-1919 are tentative revised estimates of the Bureau of Agricultural Economics.

²Obtained by subtracting the estimates of "milk cows on farms" shown in table 379 from the estimates of "all cattle on farms" shown in this table.

³ Data for 1900-1925 are an old series adjusted on basis average relationship between the old and new series

Data for 1900-1925 are an old series adjusted on hasis average relationship between the old and new series for 1926-25. Old series was weighted averages of prices by age groups only and was shown in 1928 Yearbook. The conversion factor was 0.9466 (base is old series). Data for 1926-35 are a new series, referred to above, of average values by age and sex classification, weighted by numbers in each class.

4 Italic figures are from the census. Census dates were June 1, 1900; Apr. 15, 1910; Jan. 1, 1920 and 1925; Apr. 1, 1930. 1900, 1910, and 1930 include spring-born calves.

5 Preliminary.

Table 319.—Cattle and calves, including cows and heifers kept for milk: Number on farms and farm value per head, by States, Jan. 1, 1932–35

Otata and Malatan		Nur	nber		Fa	rm valu	e per hea	đ 1
State and division	1932	1933	1934	1935 ²	1932	1933	1934	1935
Maine	Thou-sands 249 131 435 186 29 159 1,986 163 1,398	Thou- sands 251 131 446 179 29 159 2,042 170 1,412	Thou- sands 254 132 416 183 30 160 2,049 177 1,440	Thou- sands 245 129 396 186 28 1,968 1,968 1,84 1,454	Dollars 37. 10 45. 00 40. 60 69. 50 71. 20 66. 50 49. 50 73. 50 47. 20	Dollars 26, 50 34, 00 31, 00 50, 90 54, 50 49, 00 39, 10 51, 10 33, 20	Dollars 24, 20 30, 10 29, 50 51, 00 54, 70 49, 90 40, 60 61, 20 34, 60	Dollars 27, 40 35, 70 33, 60 54, 50 57, 70 57, 40 43, 80 68, 30 35, 90
North Atlantic	4, 736	4,819	4,841	4, 748	49. 56	37. 10	38. 26	41. 36
Ohio	1,610 1,428 2,361 1,390 3,213	1, 674 1, 485 2, 525 1, 418 3, 198	1,708 1,515 2,525 1,461 3,230	1, 657 1, 485 2, 399 1, 403 3, 036	34. 60 30. 50 31. 80 34. 80 34. 40	25. 10 22. 80 24. 00 25. 80 24. 20	22, 50 20, 00 22, 20 23, 40 22, 90	24. 90 25. 10 26. 60 27. 20 27. 40
East North Central	10, 002	10, 300	10, 439	9, 980	33. 32	24. 31	22. 31	26. 43
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	3, 246 4, 200 2, 660 1, 566 1, 925 3, 138 3, 298	3, 408 4, 284 2, 735 1, 750 2, 214 3, 326 3, 463	3, 511 4, 498 2, 770 1, 835 2, 214 3, 592 3, 671	3, 090 4, 228 2, 271 1, 157 1, 506 2, 694 3, 084	25. 60 26. 70 23. 80 22. 30 22. 00 24. 20 22. 00	18. 30 20. 60 18. 40 16. 60 17. 00 18. 80 17. 20	17. 00 19. 50 15. 50 13. 80 14. 40 18. 00 15. 20	19. 60 20. 50 18. 20 17. 80 16. 50 18. 70 16. 80
West North Central	20, 033	21, 180	22, 091	18, 030	24. 17	18. 39	. 16.63	18. 66
North Central	30, 035	31, 480	32, 530	28, 010	27. 22	20. 33	18. 45	21. 43
Delaware Maryland Virginia West Virginia West Virginia South Carolina South Carolina Georgia Florida Florida	49 277 792 510 551 274 811 458	50 282 800 536 588 290 852 480	49 285 800 557 606 290 894 494	50 288 776 530 606 290 894 522	46. 20 41. 20 27. 80 28. 50 27. 20 23. 70 16. 50 17. 90	30. 90 29. 00 21. 20 22. 40 20. 60 19. 50 12. 30 14. 00	35. 20 29. 60 20. 30 20. 20 19. 70 20. 10 13. 00 14. 80	35. 00 32. 50 22. 70 21. 30 21. 50 20. 20 13. 50 15. 50
South Atlantic	3, 722	3, 878	3, 975	3, 956	25. 06	19.00	18. 73	19, 99
Kentucky	1, 040 1, 032 810 993 848 740 2, 131 6, 127	1, 071 1, 094 875 1, 052 915 784 2, 280 6, 495	1, 115 1, 116 901 1, 094 960 839 2, 462 6, 740	1, 137 1, 071 910 1, 094 883 872 2, 142 5, 392	23. 20 20. 50 15. 80 14. 40 16. 30 18. 20 18. 80 17. 40	18. 00 15. 30 11. 80 10. 20 12. 70 13. 10 14. 10 13. 40	16.30 14.30 12.30 10.30 10.70 13.60 11.40 11.70	18, 80 16, 00 13, 10 11, 10 11, 00 14, 70 13, 30 13, 60
South Central	13, 721	14, 566	15, 227	13, 501	17. 94	13. 61	12.15	13.84
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	475 310	1, 416 701 930 1, 557 1, 280 894 460 316 646 835 1, 926	1,543 736 1,023 1,713 1,445 930 474 332 659 877 1,985	1, 250 714 800 1, 439 1, 050 930 403 325 679 877 1, 985	24. 00 24. 70 24. 50 22. 50 21. 60 22. 30 22. 70 25. 70 37. 00 29. 80 33. 60	20, 90 19, 50 19, 90 16, 10 15, 10 16, 50 19, 70 20, 80 25, 50 21, 10 25, 50	17. 20 15. 90 16. 20 14. 50 14. 20 15. 10 17. 10 18. 90 19. 90 15. 90 23. 70	18. 30 18. 10 17. 20 16. 40 15. 80 16. 00 17. 60 20. 90 26. 60 24. 10 29. 30
Western	10, 442	10, 961	11,717	10, 452	26, 45	20, 03	17. 29	20.65
United States.	62, 656	65, 704	68, 290	60, 667	26.62	19.94	18. 27	21.07

¹ Sum of total value of subgroups (classified by age and sex) divided by total number and rounded to nearest dime for States. Division and United States averages not rounded. State figures are new weighted value series, not comparable to State figures previously published for the years prior to 1925.
² Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 320.—Cattle: Number in countries having 150,000 or over, averages 1921-25 and 1926-30, annual 1930-33

	and 1926-30, c	innuai .	1930-33)			
Const.	Date or month	Ave	rage	1930	1931	1932	1933
Country	of estimate	1921-25 1	1926-30 1	1890	1991	1932	1900
NORTH AMERICA, CENTRAL AMERICA, AND WEST INDIES		Thou-	Thou-	Thou-	Thou-	Thou-	Thou-
AMERICA, AND WEST INDIES		sands	sands	onmde	sands	sands	onmdo
United States	January 1 June	66, 725 9, 588	58, 363 8, 860	59, 730	60, 987 7, 991	62, 656 8, 511	65, 704 8, 876
AMERICA, AND WEST INDIES United States	do	2 2, 492	3 7, 834 397	59, 730 8, 937 4 10, 083			8,810
Guatemala	July	268	397	410	387	369	
Honduras		8 466 (340)	(517) 4 (328) (1, 200)	517			
Nicaragua		6 1, 200	(1, 200)	4 328			
Costa Rica	January 1 8 May	435	430	7 399			
Cuba	January 1 8	4, 841 640	4, 496 694	4, 845 900	4, 339		4, 448
Puerto Rico	May	279	4 311	900 4 311			
Estimated total 9		87, 900	84,000				
COTTMIT A MEDICA							
Colombia		7.468	6, 857	7, 343	8,000		
Venezuela		2, 689	63,000	6 3, 000			
British Guiana		117	148	6 3, 000 155	181	186	
Ecuador	Fahrmary	1 108	1, 282 4 1, 806	7 1 000	1, 290		
Bolivia	r obtuary	2, 145	1, 918	7 1, 806 2, 050	2,064		
Chile		1, 957	2, 153	2, 050 4 2, 388		4 2, 388	
Brazil 10	Moreh 4 mil	4 9 420	(47, 492)	- T 100	47, 492		
Paragnay	January 1 8	4, 600	(4, 500)	64,000	6 4, 000	7, 372 6 4, 000	6 7, 200 6 4, 000
Argentina	do.8	4 37, 065	1, 800 1, 918 2, 153 (47, 492) 4 7, 128 (4, 500) 12 32, 212	4 7, 128 6 4, 000 12 32, 212	- 4,000	- 2, 000	
Colombia. Venezuela. British Guiana Ecuador. Peru. Bolivia. Chile. Brazil 10 Uruguay. Paraguay. Argentina. Estimated total 9.		101, 500	108, 500				
EHROPE	î .						
England and Wales Scotland Northern Ireland Hish Free State Norway 13 Sweden Denmark Netherlands	June	5,824	6,072	5, 850	6,065	6, 358	6, 620
Scotland	do	1, 171 748	1, 218 695	1, 233 673	1, 209	1, 233 715	1, 279 734
Northern Ireland	do	748 4, 266	1 4 050	673	681	715	734
Norway 13	do	1, 128	4, 059 1, 221	4,038	4, 029 1, 310	4,025	4, 137
Sweden	June-July	1, 128 4 2, 736	2, 980	1, 251 3, 060	3, 109	3, 120	3,086
Denmark.	July	2, 613 4 2, 063	1, 221 2, 980 2, 981 4 2, 366 1, 719	1 3, 057	3, 109 3, 208	1, 342 3, 120 3, 237	1,340 3,086 3,134 2,877 1,784
Relgium	May-July	1, 550	2,360	4 2, 366 1, 738	1 750	1, 768	2,877
France	do.	13, 582	14, 886	15, 631	1, 759 15, 467	15, 434	15, 643
Netheriands Belgium. France Spain Portugal Lidy in Switzerland	dodo June-July July May-July January 1 8 do. 3 do. 8 do. 8	3, 457 797	14, 886 3, 714 4 853	15, 631 (3, 657)	(3,655)	3, 654	
Italy 10		1 191	47 108	4 7, 108			
Switzerland	April	4 1, 425 16, 786	4 7, 108 1, 598 17, 776		1,609		1,684
Germany	January 18	16, 786	17,776	18,033	1, 609 18, 470	19, 124	1, 684 19, 139
Czechoslovakia 10	January-April	4 377	4 2, 313	4 2, 313	4 450	4, 451	241
Hungary	April	2, 241 4, 377 1, 865	4, 693 1, 814	4 2, 313 14 4, 540 1, 785	4, 459 1, 814	1, 819	4, 341 1, 697 3, 851 921
Yugoslavia 10	January 1 8	4, 204 742	3,749	3, 765 874	3, 850 881	1, 819 3, 912	3, 851
Rulgaria 10	do.8	1, 928	926 2, 266	874	881	913	921
Rumania 10	do.8	5, 570	1 4.820	4, 521	15 4, 150	4. 269	4 382
Poland	June	5, 570 16 8, 063	9, 019 1, 245	9, 400 1, 160	9, 786 1, 034	4, 269 9, 461 1, 121	4, 382 8, 985
Lithuania	January 1 8	1, 149 867	1, 245	1, 160	1,034	1, 121	1 1.154
Estonia	July	508	977 623	1,026 627	1, 117	1, 153 692	1, 156
Germany Austria. Czechoslovakia 10 Hungary Yugoslavia 10 Greece 10 Bulgaria 10 Rumania 10 Poland Lithuania Latvia Estonia. Finland Union of Soviet Socialist Repub-	March-April April January 1 8 January 1 9 January 1 8 April January 1 8 April January 1 8 do 8 do 8 June January 1 8 June June July September	1,847	1,841	1,810	1,822	1.806	1
Union of Soviet Socialist Republics.		54, 120	64, 900	52, 500	47, 900	40, 700	38, 400
Estimated total, excluding		98, 400	103, 700	-			
Estimated total, excluding Union of Soviet Socialist Republics. ⁹			100, 100	-			
Republics.9		1	1	1	1	1	
AFRICA.	1	// 0003	(4 000)		1	İ	
Morocco		(4, 000) 1, 711	(4, 000) 1, 971	2,092	1 000	1 057	
Algeria	September	853	903	938	1, 909 872	1, 954 893	896
Tunis.	January 18	459	464	498	502	540	543
French Suden		2, 165 1, 086	2, 536 1, 025	2, 788 1, 139	2,779	2, 773 1, 147	
Nigeria and British Cameroons		2, 909	3, 117	3, 118	1,400 3,056	2, 762	
French Cameroon		354	1 414	504	504	504	
Applo-Egyption Codes	September	1,310	1, 551	1,572	1,614	1, 791	1,769
Italian Somaliland	February	864 11 1, 246	1,461	1,300	1, 200	1, 250	
Eritrea		553	4 740		.		
Kenya	March-June	3,038	3 812	5, 193 1, 910			
French Equatorial Africa	January 1 8	1, 109 815	1,605	1,910	1, 985 6 1, 504	2, 065	2, 15
Belgian Congo		495	1, 605 1, 278 303	1, 456 299	312	318	
Republics. AFRICA Ethiopia Morocco Algeria Tunis French West Africa French Sudan Nigeria and British Cameroons French Cameroon Egypt 10 Anglo-Egyptian Sudan Italian Somaliland Eritrea Kenya Uganda French Equatorial Africa Belgian Congo Ruanda Angola		. 700	887	936	831	763	
Angola See footnotes at end of table.		524	1,073	1,480	1,570	ł	-
see mornores at end of table.							

Tarle 320.—Cattle: Number in countries having 150,000 or over, averages 1921-25 and 1926-30, annual 1930-33-Continued

ana 18	720–30, <i>unnua</i>	1900-	,J—C()	ummea			
Country	Date or month	Ave	rage	1000	1001	1000	1000
Country	of estimate	1921-251	1926-301	1930	1931	1932	1933
AFRICA—continued Southwest Africa	August	Thou- sands 561 482 9, 459 604	Thou- sands 643 602 10, 640 653	Thou- sands 655 630 10, 751 649	Thou- sands 645 641	Thou- sands 725 642	Thou- sands 628 777
Rhodesia: Northern Southern Swaziland. Tanganyika Territory Nyasaland Mozambique. Madagascar Estimated total ASIA	January 1 s do. s do. s do. s do. s do. s do. s do. s do. s do. s february	289 1, 794	415 2, 268 316 4, 823 151 446 6, 952 56, 700	473 2,398 380 5,170 171 491 6,705	466 2, 468 334 5, 099 175 517 6, 760	452 2, 582 372 5, 336 183 519	2, 747 319
Turkey, European and Asiatic 10. Iran Syria and Lebanon India: 10		17 5, 060 6 1, 000 257	5, 464 (1, 000) 300	5, 243 391	5, 363 1, 622 426	5, 870 486	5, 664
British Native States Ceylon ¹⁰ China, including Turkistan, Manchuria, and luner Mongolia.	December-April January 1 8	146, 759 33, 982 1, 459 19, 000	151, 847 36, 421 1, 570 19 23, 000	4 154, 629 4 47, 104 1, 650	152, 868 47, 591 1, 660	152, 762 1, 580	
Japan Chosen Taiwan 10 French Indo-China 10 Siam 10 Philippine Islands 10 Nutribus A Taide	do.§ do.s March January 1 8	1, 567 407 3, 600 6, 701 2, 393	1, 474 1, 586 385 3, 896 8, 783 2, 909	1, 488 1, 586 390 3, 919 9, 153 3, 110	1, 498 1, 612 391 3, 913 9, 513 3, 249	1, 512 1, 637 383 3, 917 9, 867 3, 432	1, 529 1, 664 367
Java and Madura 10 Outer possessions 10 Estimated total, excluding Union of Soviet Socialist Republics.9	do.8	5, 287 1, 872 232, 600	5, 708 1, 994 248, 200	5, 700 2, 049	5, 768 2, 064	6, 014 2, 069	6, 321 2, 065
OCEANIA Australia New Zealand Estimated total 9	January 1 8 January 31	13, 789 3, 393 17, 400	11,873 3,439 15,500	11, 202 3, 766	11, 721 4, 081	12, 260 4, 072	12, 783 4, 192
Total countries reporting all periods: To 1932 (63) 20 To 1933 (41) 20 Estimated world total including Union of Soviet SocialistRepublics. 21		442, 421 254, 473 641, 900	458, 928 260, 594 681, 500	452, 559 250, 133	448, 795 247, 773	446, 586 245, 571	247, 586

¹ Average for 5-year period if available, otherwise for any year or years within this period except as otherwise stated. 2 Incomplete 3 Average of 1926 estimate for 93 percent of municipalities and the final figures of the Apr. 26, 1930, census,

This census is the first complete census of numbers in Mexico and is therefore not strictly comparable with earlier estimates.

⁴ Census.

Section 1918.
Countries reporting as of December have been considered as of Jan. 1 of following year.
Countries reporting as of December have been considered as of Jan. 1 of following year. 7 Year 1929.

These totals include interpolations for a few countries not reporting each year and rough estimates for some others.

¹² Census June. 10 Buffaloes included. 11 Year 1920. 13 In rural communities only.

¹⁴ Census figures for May 27. 16 Estimate of total number based on number in rural communities only as compared with preceding

¹⁶ November.

17 Included unofficial estimate of 690,000 buffalces.

18 Estimate based on official figures in 1920 for 20 Provinces, which supported 63 percent of the cattle in China in 1914. No data available in 1920 for such important Provinces as Hupch with 1,898,000 in 1914, Hunan with 2,192,000, Szechuan with 3,009,114, Kwantung with 2,298,000, and Kwangsi with 1,527,000.

19 Estimate based on official figures in 1932 or 1933 for 22 Provinces, which supported 97 percent of the cattle in China in 1914. The official estimate excluding Turkistan and Inner Mongolia for 1932 or 1933 was 22,333,000. Estimates for this territory and for Manchuria included with China in this table.

20 Comparable totals for number of countries indicated.

21 Estimated totals for continents are a follows in millions of head for the 5-year average, 1909—13. North

²⁰ Comparable totals for number of countries indicated.

21 Estimated totals for continents are as follows in millions of head for the 5-year average, 1909–13: North America, Central America, and West Indies, 74.9; South America, 80.3; Europe, excluding Union of Soviet Socialist Republics, 103.3; Africa, 33.8; Asia, excluding Union of Soviet Socialist Republics, 195.3; Oceania, 13.8; world including Union of Soviet Socialist Republics, 562.0.

Bureau of Agricultural Economics; compiled from reports of United States Government representatives abroad, original official sources, and the International Institute of Agriculture unless otherwise stated.

Figures in parentheses interpolated. For later figures for individual countries see Cattle and Beef issue of Foreign Crops and Markets.

Table 321.—Cattle and calves: Receipts at principal public stockyards and a public stockyards, 1925-34

CATTLE

Year	Chi- cago	Den- ver	East St. Louis	Fort Worth	Kan- sas City	Omaha	South St. Joseph	St.	Sioux City	Total 9 mar- kets ¹	All other stock- yards report- ing	Total all stock- yards report- ing 1
1925	Thou-sands 3, 023 3, 257 2, 872 2, 505 2, 388 2, 239 2, 287 2, 006 2, 067 2, 727	Thou- sands 527 473 577 590 556 505 440 365 348 633	Thou- sands 1,038 1,074 1,004 900 832 820 792 709 727 1,225	Thou- sands 1, 064 944 956 886 762 638 598 444 417 757	Thou-sands 2, 409 2, 183 2, 070 1, 859 1, 836 1, 802 1, 065 1, 570 1, 443 2, 256	Thou-sands 1, 593 1, 092 1, 463 1, 423 1, 444 1, 485 1, 570 1, 333 1, 417 1, 971	Thou- sands 609 563 541 511 500 459 433 360 399 650	Thou- sands 995 1, 180 955 917 879 779 811 690 835 1, 476	Thou- sands 845 885 747 750 778 774 769 545 774 1, 184	Thou-sands 12,098 12,251 11,186 10,342 9,974 9,501 9,364 8,022 8,427 12,879	Thou-sands 5,019 4,783 5,072 4,847 4,363 4,297 4,122 3,809 3,920 6,800	Thou-sands 17, 117, 034 16, 258 15, 189 14, 337 13, 798 11, 831 12, 347 19, 679
					CAL	VES						
1925	848 755 710 762 672 557 547 447 440 737	60 56 63 77 68 88 64 59 71	406 452 444 415 391 383 379 356 392 590	310 241 330 325 327 331 243 209 223 381	549 433 400 351 342 364 292 284 276 594	116 123 98 94 102 120 120 120 120 278	125 116 99 87 89 100 76 77 84 144	041 730 627 573 546 559 603 544 515 840	52 84 62 63 61 82 82 49 56 222	3, 108 2, 991 2, 834 2, 746 2, 601 2, 586 2, 406 2, 145 2, 178 3, 920	3, 842 3, 846 3, 671 3, 543 3, 502 3, 782 3, 723 3, 356 3, 409 4, 170	6, 950 6, 837 6, 505 6, 289 6, 103 6, 368 6, 129 5, 501 5, 587 8, 090

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau.

Receipts, 1915-24 are available in 1927 Yearbook, table 337.

 $^{^1}$ Rounded totals of the complete figures. 2 Includes purchases for Federal Surplus Relief Corporation from June 6 to Dec. 31.

Table 322.—Cattle and calves: Receipts and stocker and feeder shipments at United States public stockyards, 1925-34

RECEIPTS, CATTLE

			1	1.									
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1925 1926 1927 1928 1929 1930 1931 1932 1933	Thou-sands 1, 353 1, 314 1, 327 1, 272 1, 160 1, 155 1, 040 960 908 1, 145	Thou-sands 1, 056 1, 065 1, 080 1, 045 814 908 878 869 773 958	Thou-sands 1, 273 1, 233 1, 172 966 953 1, 045 1, 017 897 758 969	Thou-sands 1, 201 1, 146 1, 107 1, 119 1, 146 1, 066 1, 057 897 843 1, 053	Thou- sands 1, 139 1, 277 1, 348 1, 188 1, 097 984 1, 027 919 1, 030 1, 192	Thou- sands 1, 160 1, 279 1, 185 1, 057 977 996 1, 017 870 985 1, 215	Thou-sands 1, 398 1, 279 1, 089 1, 158 1, 166 1, 012 1, 035 888 1, 008 2, 129	Thou-sands 1, 632 1, 421 1, 494 1, 308 1, 156 1, 062 1, 302 1, 123 1, 173 3, 097	Thou-sands 1, 592 1, 827 1, 482 1, 669 1, 572 1, 511 1, 279 1, 232 1, 178 2, 822	Thou-sands 2, 126 2, 030 2, 008 1, 913 1, 787 1, 677 1, 531 1, 346 1, 587 2, 222	Thou-sands 1, 717 1, 836 1, 749 1, 419 1, 405 1, 180 1, 312 1, 039 1, 203 1, 598	Thou-sands 1, 470 1, 327 1, 217 1, 075 1, 104 1, 202 991 789 901 1, 279	Thou-sands 17, 117 17, 034 16, 258 15, 189 14, 337 13, 798 13, 486 11, 831 12, 347 19, 679
					REC	EIPTS	, CAL	VES					
1925 1926 1927 1928 1930 1931 1932 1934 1 1934 1 1934 1 1934 1 1934 1 1934 1	516 526 504 499 479 484 468 416 416 508	473 486 476 471 381 418 425 414 364 449	588 578 571 499 497 502 518 480 413 530	626 564 567 566 606 578 560 478 453 538	597 616 607 610 563 533 524 478 528 617	586 592 547 501 475 464 522 468 465 597	572 541 457 492 499 453 403 448 856	612 576 571 521 463 543 519 481 496 1,178	566 570 507 522 531 596 518 457 474 956	663 644 627 629 620 700 606 550 592 778	565 625 598 544 538 517 554 504 496 565	586 519 473 435 451 534 482 372 442 518	6, 950 6, 837 6, 505 6, 289 6, 103 6, 368 6, 129 5, 501 5, 587 8, 090
		1	STOCE	CER A	ND F	EEDEI	SHIP	MENT	S, CA	TTLE			
1925	194 207 187 215 159 201 189 108 126 129	163 164 162 175 106 173 130 96 107	213 171 182 154 146 176 126 108 87 119	254 190 184 236 266 219 156 116 127 124	198 201 215 263 266 172 135 100 153 136	143 158 157 165 157 108 100 90 129 124	234 188 128 175 159 99 108 136 96 439	347 240 252 312 246 130 231 247 183 731	409 495 384 525 394 368 348 347 233 483	681 648 626 704 673 570 495 392 444 396	449 521 548 420 459 375 384 296 310 259	308 273 278 218 219 267 207 168 129 136	3, 593 3, 456 3, 303 3, 562 3, 250 2, 858 2, 609 2, 203 2, 124 3, 176
			stoci	CER A	ND FI	EEDEI	RSHIE	MEN	rs, ca	LVES			
1925	12 18 18 18 19 32 33 22 27 36	13 13 13 19 12 28 18 14 22 21	17 13 18 19 16 30 20 18 15 20	17 13 19 18 26 36 19 22 25 23	18 17 20 21 28 28 18 18 40 26	11 11 12 19 19 21 12 15 20 15	9 11 10 21 14 10 16 21 15 42	13 12 19 24 20 20 30 33 30 70	18 26 22 37 29 75 42 43 29 67	37 45 49 94 85 121 86 86 83 81	40 49 67 76 97 103 103 81 71 59	25 26 41 35 37 64 38 42 46 29	230 256 306 403 401 568 435 416 423 489

¹ Includes purchases for Federal Surplus Relief Corporation from June 6 to Dec. 31.

Bureau of Agricultural Economics. Compiled from data of the livestock and meat reporting service of the Bureau. Earlier data in 1930 Yearbook, table 353.

Table 323.—Feeder cattle, inspected: Shipments from public stockyards, 1925-34

<u> </u>					Calend	ar year				
Origin and destination	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Market origin:	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou-	Thou-	Thou- sands	Thou- sands	Thou- sands	Thou- sands
Chicago, Ill	230	245	167	171	157	132	173	141	128	145
Denver, Colo	281	288	328	403	334	327	228	165	169	167
East St. Louis, Ill	113	110	97	90	99	86	95	103	81	115
Fort Worth, Tex Indianapolis, Ind	196	233	273	285	237	190	153	116	86	138
Indianapolis, Ind	55	44	29	31	27	27	25	24	25	35
Kansas City, Kans	1 825	706	671	684	680	650	635	595	504	511
Louisville, Ky	27	19	34	24	17	10	7	23	25	38
Louisville, Ky Oklahoma City, Okla Omaha, Nebr	78	69	89	80	85	70	64	70	74	90
Omaha, Nebr	390	379	329	355	398	405	385	330	332	284
Sioux City, Iowa	247	300	237	274	286	282	229	171	248	264
South St. Joseph, Mo	71	56	51	60	61	90	88 138	73	86 102	104
South St. Paul, Minn	208	291	203	198	209	153 217	173	95 116	102	244 280
Wichita, Kans	200 177	152	198	205 344	164 326	312	301	290	289	434
All other inspected		195	268							
Total	3, 098	3,087	2, 974	3, 204	3,080	2, 951	2, 694	2, 312	2, 266	2,849
State destination:										
Colorado	131	169	180	210	184	156	113	80	76	71
Illinois	437	435	290	310	313	275	321	364	264	276
Indiana	150	167	136	113	106	94	132	133	94	147
<u>Iowa</u>	487	577	431	499	538	506	483	434	525	492
Kansas	468	378	423	478	463	454	351	271	274	210
Kentucky	- 41	43	86	59	46	24	27	34	36	113
Michigan	49	41	36	41	34	21	24	26	24	27
Minnesota		32	25	29	42	41	28	21	21 198	23 162
Missouri Nebraska	277	255 374	267	229 474	203	192	218	186 264	310	210
Ohio	427 97	102	386 93	70	447 83	561 52	419 93	91	63	114
Oklahoma	168	159	170	143	155	128	103	97	92	51
Panneylyania	31	30	31	70	44	37	39	57	62	115
Pennsylvania South Dakota	38	32	50	64	75	91	45	26	32	30
Texas	116	151	160	196	155	123	98	71	52	82
Wisconsin	26	29	12	12	20	14	11	1 7	8	9
All other	119	113	198	207	172	182	189	150	135	717
Total		3,087	2, 974	3, 204	3,080	2, 951	2, 694	2, 312	2, 266	2, 849

Bureau of Agricultural Economics. Compiled from Bureau of Animal Industry inspection records. Data for earlier years in 1928 Yearbook, table 356.

Table 324.—Beef cattle and veal calves: Average price per 100 pounds received by producers, United States, 1925-34

BEEF CATTLE

Year	Jan, 15	Feb.	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Weight- ed av- erage
1925 1926 1927 1927 1928 1929 1929 1930 1931 1932 1932 1933	6. 29 6. 42 8. 45	Dol. 5. 66 6. 39 6. 57 8. 70 8. 83 8. 63 5. 98 4. 08 3. 31 3. 67	Dol. 6. 15 6. 62 6. 79 8. 81 9. 09 8. 72 5. 98 4. 25 3. 42 3. 79	Dol. 6.50 6.64 7.12 8.88 9.45 8.60 5.95 4.19 3.54 3.89	Dol. 6. 44 6. 55 7. 15 9. 03 9. 64 8. 32 5. 61 3. 91 3. 95 4. 13	Dol. 6. 43 6. 55 7. 06 9. 07 9. 67 8. 14 5. 21 3. 81 4. 04 4. 00	Dol. 6. 54 6. 43 7. 11 9. 16 9. 75 7. 06 5. 11 4. 52 3. 97 3. 90	Dol. 6. 55 6. 27 7. 18 9. 45 9. 55 6. 22 5. 05 4. 35 3. 79 3. 71	Dol. 6. 25 6. 46 7. 39 9. 93 9. 16 6. 58 4. 96 4. 31 3. 61 4. 21	Dol. 6, 26 6, 40 7, 52 9, 62 8, 85 6, 50 4, 72 3, 91 3, 50 3, 96	Dol. 6. 11 6. 29 7. 96 9. 21 8. 57 6. 39 4. 76 3. 73 3. 32 3. 81	Dol. 6. 17 6. 37 8. 29 8. 90 8. 43 6. 33 4. 32 3. 41 3. 12 3. 88	Dol. 6. 23 6. 43 7. 23 9. 12 9. 15 7. 46 5. 31 4. 07 3. 63 3. 88
					VEAL	CAL	VES						
1925 1926 1927 1928 1929 1929 1930 1931 1931 1932 1933	10.87 12.20 11.84	8. 85 9. 85 10. 10 11. 30 12. 17 11. 69 8. 20 5. 80 4. 75 5. 02	9. 21 9. 74 10. 10 11. 33 12. 51 11. 24 7. 66 5. 69 4. 57 4. 95	8.80 9.45 9.90 11.18 12.09 10.73 7.38 5.04 4.36 4.79	8. 35 8. 92 9. 37 11. 17 12. 10 9. 68 7. 15 4. 67 4. 50 4. 83	8. 18 9. 65 9. 46 11. 55 12. 05 9. 83 6. 81 4. 63 4. 51 4. 52	8. 65 9. 47 9. 82 11. 86 12. 40 9. 19 6. 66 5. 00 4. 62 4. 45	10.37		12, 61	9. 16 9. 54 10. 67 11. 99 11. 79 8. 84 6. 02 4. 47 4. 66 4. 97	9. 17 9. 44 10. 71 11. 81 11. 68 8. 48 5. 59 4. 16 4. 20 4. 88	8. 85 9. 61 10. 15 11. 72 12. 17 9. 91 7. 04 5. 00 4. 61 4. 81

Bureau of Agricultural Economics. Based on reports of special price reporters. Monthly prices of beef cattle, by States, weighted by number of cattle Jan. 1 to obtain a price for the United States; monthly prices of veal calves, by States, weighted by number of milk cows Jan. 1 to obtain a price for the United States; yearly price obtained by weighting monthly prices by Federal inspected slaughter.

Table 325.—Cattle and calves: Average price per 100 pounds at Chicago, by months, beef steers and veal calves, 1925-34

BEEF STEERS

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Dol. 8. 97 9. 48 9. 70 13. 67 12. 51 12. 62 9. 43 6. 61 4. 95 5. 35	Dol. 9. 15 9. 42 9. 81 13. 15 11. 92 12. 46 8. 36 6. 21 4. 80 5. 49	Dol. 9. 93 9. 42 10. 20 12. 83 12. 68 12. 33 8. 40 6. 31 5. 91	Dol. 9. 99 9. 11 10. 51 13. 01 13. 52 11. 88 7. 82 6. 35 4. 96 6. 42	Dol. 9. 90 9. 07 10. 68 13. 19 13. 67 11. 15 7. 30 6. 04 5. 64 6. 91	Dol. 10. 34 9. 51 11. 12 13. 86 14. 10 10. 59 7. 43 6. 66 5. 79 7. 34	Dol. 11. 28 9. 44 11. 78 15. 11 14. 59 9. 42 7. 62 7. 90 6. 01 7. 21	Dol. 11. 10 9. 30 12. 02 15. 30 14. 22 9. 48 8. 53 7. 88 5. 88 7. 34	Dol. 11. 04 10. 00 12. 63 15. 91 13. 92 10. 95 8. 29 7. 91 5. 75 8. 06	Dol. 10. 80 10. 00 13. 43 14. 61 13. 81 10. 64 8. 38 7. 09 5. 53 7. 48	Dol. 10. 16 9. 48 13. 57 13. 84 13. 00 10. 47 8. 53 6. 29 5. 13 7. 28	Dol. 9. 72 9. 43 13. 08 12. 86 12. 74 10. 17 7. 11 5. 44 5. 17 7. 41	Dol. 10. 16 9. 47 11. 36 13. 91 13. 43 10. 95 8. 06 6. 70 5. 42 6. 76
					VE	EAL CA	LVES			-	· · · · · · · · · · · · · · · · · · ·		
1925 1926 1927 1928 1930 1931 1932 1933 1934	10. 72 12. 18 12. 20 13. 70 15. 83 14. 80 10. 62 7. 56 5. 57 6. 01	11. 94 12. 43 12. 40 15. 04 14. 74 12. 66 9. 26 7. 52 6. 49 6. 62	11, 24 12, 06 11, 54 13, 75 15, 50 11, 96 7, 98 6, 41 5, 60 6, 20	9, 49 9, 91 10, 90 13, 02 14, 43 10, 55 8, 12 5, 44 5, 18 5, 94	9, 42 11, 04 11, 07 13, 95 13, 39 11, 36 8, 35 5, 70 5, 72 5, 97	9. 56 11. 09 11. 68 13. 24 14. 22 11. 03 8. 48 6. 06 5. 24 4. 94	10. 91 11. 38 13. 32 14. 84 15. 30 11. 37 7. 81 6. 10 5. 94 5. 26	11, 94 12, 46 14, 75 16, 68 15, 81 11, 98 9, 32 6, 80 6, 69 6, 25	12. 18 12. 59 15. 94 17. 36 16. 64 11. 83 9. 28 7. 06 7. 12 7. 58	11, 19 11, 80 14, 42 14, 94 13, 76 11, 33 7, 75 5, 48 6, 47 6, 82	10.60 11.09 13.48 14.22 13.70 9.53 6.56 5.09 5.42 5.78	11. 30 11. 31 13. 09 13. 94 13. 82 9. 77 6. 40 5. 26 5. 16 5. 87	10. 87 11. 61 12. 90 14. 56 14. 76 11. 51 8. 33 6. 21 5. 88 6. 10

¹ Western steers not included.

Bureau of Agricultural Economics.

Beef-steer prices are the weighted average price of all grades of beef steers sold out of first hands at Chicago.
Veal-calf prices from the livestock and meat reporting service of the Bureau on Medium to Choice grades prior to July 1, 1927, and subsequent prices on Good and Choice grades.

Earlier data in 1932 Yearbook, table 321.

Table 326.—Cattle, choice steers for chilled beef: Average price per 100 pounds, by months, at Buenos Aires, 1925-35

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925 1926 1927 1928 1929 1930 1931 1931 1932 1933 1934 1934	Dol. 5. 54 5. 40 4. 21 6. 08 5. 89 5. 72 3. 50 2. 20 1. 49 2. 50 2. 80	Dol. 5. 54 5. 42 4. 73 6. 01 5. 90 5. 35 3. 73 2. 30 1. 83 2. 62 2. 85	Dol. 6.20 5.27 4.63 6.24 5.85 5.45 4.21 2.18 1.89 2.67	Dol. 6. 20 5. 39 5. 03 6. 47 5. 87 5. 71 3. 97 2. 18 2. 05 2. 74	Dol. 6. 51 5. 52 4. 81 6. 68 5. 87 5. 57 3. 69 2. 25 2. 56	Dol. 6, 48 5, 24 5, 15 7, 01 6, 03 5, 43 3, 68 2, 28 2, 75 2, 60	Dol. 6. 54 5. 58 5. 95 6. 64 6. 09 5. 24 3. 58 2. 29 3. 20 2. 73	Dol. 6.72 5.70 6.55 6.66 6.06 5.27 3.59 2.27 3.15 2.97	Dol. 6. 91 5. 45 6. 84 6. 63 6. 09 5. 16 3. 22 2. 13 3. 35 2. 94	Dol. 6, 25 4, 63 7, 13 6, 16 6, 80 4, 84 2, 52 1, 80 3, 23 2, 86	Dol. 5, 66 4, 06 6, 34 5, 50 6, 02 4, 38 2, 76 1, 69 3, 14 2, 83	Dol. 5.32 4.21 5.81 5.49 5.92 3.67 2.34 1.58 2.61 2.69	Dol. 6. 16 5. 16 5. 60 6. 30 6. 03 5. 15 3. 40 2. 10 2. 61 2. 73

Bureau of Agricultural Economics. Compiled from Review of the River Plate, as follows: 1925–27, average of Thursday quotations; 1925–34, average of high and low for weeks ended Saturday. Prices are quoted in live weight per pound. Converted at average monthly rates of exchange as given in Federal Reserve Bulletin. Data for earlier years in 1928 Yearbook, table 359.

Table 327.—Cattle and calves: Shipments, staughter, value of production, and income by States, 1933

	Value of produc- tion		1,000 dollars 1,449 741 2,149 811 151 12,891 1,320 11,004	31, 424	14, 176 14, 899 27, 152 10, 603 17, 682	84, 512	28, 814 61, 217 31, 460 12, 476 18, 290 41, 951 39, 627	233, 844	318, 356	1,980 5,886 4,125
	Ctross income		1,000 dollars 1, 531 767 2, 648 474 77 741 13, 106 10, 909	30, 733	13, 038 14, 451 26, 788 9, 712 18, 254	82, 243	26, 313 64, 691 29, 505 10, 647 18, 287 37, 604 35, 675	212, 722	294, 965	341 1,871 5,794 3,770
	Receipts from sales		1,000 dollars 1,500 2,552 2,582 444 65 710 12,699 12,699 10,068	29, 177	12, 384 14, 187 26, 256 9, 136 17, 816	79, 779	24, 762 53, 501 29, 151 9, 987 17, 829 36, 524 36, 231	206, 985	286, 764	336 1, 788 5, 659 3, 617
	Value of amount consumed	on farms	1,000 dollars d 8 86 8 90 30 22 22 507 507 851	1,556	054 264 532 576 438	2, 464	1,551 1,190 354 660 458 1,080 444	5, 737	8, 201	83 135 153
	Calves	Total weight	1,000 pounds 1, 125 1, 126 1, 485 1, 120 120 120 9, 260 9, 360 7, 140	20, 378	4, 000 2, 500 6, 000 9, 920 16, 250	38, 670	7, 700 6, 600 3, 000 4, 000 3, 500 9, 000 7, 100	40, 900	79, 570	270 810 1, 485 2, 625
Farm slaughter	Ö	Head	Thou-sands 0 0 11 2 11 2 3 3 2 60 2 2 5	141	130 83 12 13	257	8828488	162	419	2 6 11 15
Farm sl	Cattle	Total weight	7,000 7 pounds 8 2,800 2,800 4,900 1,800 1,500 23,800 1,800 1,800 40,800 1,800	78,800	22, 100 7, 750 16, 500 26, 400 27, 000	99, 750	54, 600 27, 720 13, 770 24, 960 11, 200 21, 000 8, 100	161, 350	261, 100	4, 250 7, 600 8, 250
	Õ	Head	Thou-sands 4 4 1 2 2 2 2 2 2 8 2 8 4 8 8 4 8	95	82888 82888	119	95 18 14 19 10	197	316	10 10
Inshipments, stocker, feeding.	breeding, and dairy	Total weight	1,000 pounds 22,460 5,740 28,050 4,980 4,980 19,550 64,525	139, 355	38, 610 62, 565 293, 985 15, 805 8, 970	419, 935	95, 000 491, 400 298, 265 20, 480 441, 530 284, 400	1, 631, 075	2, 051, 010	7,800 3,500 585
Inshi	breed dairy	Head	Thou-sands 1 3 7 7 1 33 6 10 6 89	178	86788 82 82	628	152 756 493 32 669 474	2, 566	3, 194	12 7
ghter	Calves	Total weight	1,000 pounds 5,700 3,490 14,150 6,460 1,000 6,450 95,350 70,350	212, 933	68, 640 52, 500 65, 750 52, 855 121, 210	360, 955	102, 122 43, 500 102, 800 13, 440 14, 200 37, 500 63, 450	367, 012	727, 967	3, 105 14, 040 22, 350 9, 100
ocal slau	ő	Head	Thou-sands 54 34 1140 64 10 62 64 64	1,540	455 465 1,054	2, 639	732 275 514 96 71 130 202	2, 020	4, 659	23 104 151 52
Shipments and local slaughter	Cattle	Total weight	1,000 pounds 25,220 18,820 45,100 5,810 5,810 22,210 31,500 186,250	574, 580	230, 450 320, 840 828, 285 159, 520 366, 300	1, 905, 395	648, 345 1, 696, 630 901, 500 316, 465 484, 000 1, 254, 950 1, 175, 180	6, 476, 470	8, 381, 865	3, 200 26, 350 129, 250 75, 300
Shíj		Head	Thou-sands 23 23 26 49 7 7 27 27 240 190	673	270 353 388 886 192 370	2,071	1, 759 1, 003 1, 003 379 605 1, 359 1, 264	7, 142	9, 213	31 145 87
	State and division		Maine. New Hempstire Vermont. Massachusetis Rhode Island Comnectiont New York New York New York Pennsylvanta	North Atlantic	Ohio. Indiana. Illnois. Michiga.	East North Central	Minnesota. Iowa. Iowa. Nesonii North Dakota. South Dakota. Nebraska.	West North Central	North Central	Delaware Maryland Virginis West Virginis

2, 999 1, 426 2, 485 1, 318	20, 530	7, 222 6,452 2,668 3,368 15,228 39,896 39,896	81,087	10, 385 13,7, 833 13,7, 833 6, 214 7, 923 120 6, 225 15, 961	82, 034	533, 431
2, 866 1, 443 2, 013 1, 102	19, 200	6, 178 6, 075 2, 359 2, 939 2, 937 2, 434 13, 271 35, 728	71, 359	7, 539 11, 238 11, 238 6, 938 5, 160 11, 773 17, 103	72, 914	489, 171
2, 682 1, 387 1, 871 1, 064	18, 404	6,017 5,975 2,276 2,276 2,871 2,287 12,887 12,887 34,650	69, 173	7, 140 3, 891 10, 996 6, 695 5, 206 5, 206 7, 998 1, 670 1, 670 16, 632	70, 244	473, 762
184 56 142 38	262	161 100 83 68 114 147 435 1,078	2, 186	399 114 114 242 243 243 238 103 103 104 1196 471	2,670	15, 409
2,500 1,000 8,400 920	18,010	1,760 2,750 3,150 2,400 2,700 8,750 26,000	51, 710	3,750 2,880 3,800 3,800 3,300 1,000 1,920 6,300	37,880	207, 548
ర్వ జమ్మే జ	118	8118 20 15 160 160	222	25 2 2 2 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	190	1,090
12, 000 5, 600 9, 900 4, 750	52, 350	9,000 5,800 5,400 6,480 10,290 7,050 18,200 42,250	104, 470	16,340 9,000 8,900 8,250 6,075 6,775 6,520 8,500 8,750 13,260	104, 545	601, 265
885101 10	85	12 8 12 12 21 21 26 65	171	19 112 112 10 10 10 13 17 17	133	800
1,250	13, 825	31, 200 14, 950 14, 950 3, 760 4, 200 78, 000 91, 700	225, 550	3, 550 7,7,200 75,200 115,5460 119,300 19,200 1,400 3,750 186,400	314, 260	2, 744, 000
69-1	24	23 23 8 8 12 130 131	356	233 233 325 326 326 337 337 337 337 337 337 337 337 337 33	415	4, 167
8, 375 5, 125 9, 760 3, 565	75, 420	30, 490 20, 160 7, 200 10, 200 8, 225 4, 760 33, 750 193, 440	308, 225	8, 000 5, 400 15, 125 43, 800 19, 980 19, 980 5, 600 14, 760 10, 600 83, 430	217, 545	1, 542, 090
44 60 31	530	200 144 48 68 34 135 744 744	1, 420	20 30 146 146 28 28 28 28 352	898	9,045
53, 900 29, 460 40, 500 24, 700	382, 600	155, 710 175 080 77, 175 114, 600 68, 330 67, 800 453, 645 924, 000	2, 036, 340	211, 500 114, 300 116, 895 358, 350 163, 740 125, 740 81, 550 41, 500 73, 800 119, 310 477, 460	1, 923, 205	13, 298, 590
5382	528	184 214 147 191 113 113 663 1, 232	2, 785	235 127 127 185 485 185 87 87 882 183 882 509	2, 241	15,440
North Carolina South Carolina Georgia Florida	South Atlantic	Kentucky Tennessee Alabana, Alabana, Alasisappi Arkansa, Cutisana Oklabana Texas	South Central	Montana. Idaho. Wyoming Colorado. Aricona Nigha Nighal Washington Colegon. California.	Western	United States

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between gross income and value of production arises from the fact that in computing value of production allowance is made for changes in inventory numbers between the beginning and end of the year, while in computing income these changes are not used.

Table 328.—Cattle and calves: Annual slaughter under Federal inspection, 1907-34. estimated equivalent of Federal inspection, 1900–1906, and estimated total staughter (including farm) in United States, 1900–1934 ¹

	Ca	ttle	Ca	lves		Car	ttle	Ca	lves
Year	Feder- ally in- spected	Total 2	Feder- ally in- spected	Total 2	Year	Feder- ally in- spected	Total 2	Feder- ally in- spected	Total 2
1900	6,312 6,465 6,755 6,752 7,259 7,541 7,633 7,279 7,714 7,808 7,619 7,253 6,978 6,757 7,153 8,310	Thou-sands 10, 242 11, 088 11, 697 12, 463 12, 099 12, 649 12, 941 13, 287 12, 852 13, 611 13, 541 11, 478 11, 004 10, 822 12, 027 13, 724		Thou-sands	1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1930 1931 1932 1933	10, 091 8, 609 7, 608 8, 678 9, 163 9, 593 9, 853 10, 180 9, 520 8, 467 8, 324 8, 170 8, 108 7, 625	Thou-sands 15, 750 14, 838 13, 885 12, 271 13, 148 13, 883 14, 400 14, 706 14, 971 14, 000 12, 452 12, 241 12, 168 12, 156 11, 895	Thou-sands 3, 456 3, 969 4, 083 3, 808 4, 182 4, 595 5, 353 5, 153 4, 876 4, 680 4, 494 4, 595 4, 717 4, 494 4, 595 1, 717 4, 494 7, 455 1, 717 4, 494 7, 455 1, 717 1, 454 1, 595 1, 717 1, 4, 494 1, 595 1, 717 1, 4, 494 1, 595 1, 717 1, 4, 494 1, 595 1, 717 1, 4, 595 1, 717 1, 4, 595 1, 717 1, 4, 595 1, 717 1, 4, 595 1, 717 1, 71	Thou-sands 7, 514 8, 445 7, 771 8, 363 8, 824 9, 466 10, 099 9, 542 9, 030 8, 667 8, 313 8, 532 8, 650

¹ Federal Meat Inspection Act effective Oct. 1, 1906.

Bureau of Animal Industry and Bureau of Agricultural Economics. Data for years 1880-99 last printed in 1933 Yearbook, table 316.

Table 329.—Cattle and calves: Slaughter in specified countries, 1925-34

Year	United States Federally inspected	Canada total	Argentina, including chilling, freez- ing, salting, and canned meat works ¹	Uruguay, excluding farm ²	Australia total	New Zealand total ³
1925	Thousands 15, 206 15, 333 14, 396 13, 147 12, 813 12, 765 12, 825 12, 117 13, 562 20, 651	Thousands 1, 921 1, 902 1, 993 1, 949 1, 953 1, 964 1, 702 1, 669 1, 715 (6)	Thousands 3, 871 3, 510 3, 718 3, 258 3, 024 2, 987 2, 507 2, 381 2, 527	Thousands 1, 233 1, 293 1, 231 1, 239 1, 271 1, 375 1, 285 1, 102 916 1, 006	Thousands 2, 434 2, 160 2, 189 2, 200 1, 947 1, 787 1, 751 (4) (4)	Thousands 550 519 636 806 811 894 938 1,019

¹Including municipal and private slaughterhouses, the figures were as follows, in thousands: 1930, 5,966; 1931, 5,383; 1932, 5,344. The numbers killed in freezing and chilling plants alone were as follows, in thousands: 1930, 2,679; 1931, 2,296; 1932, 2,221; 1933, 2,342; 1934, 2,606.

²Slaughtering in freezing and chilling plants alone was as follows, in thousands: 1930, 786; 1931, 617; 1932, 497; 1933, 532, 1934, 569.

³For years beginning Apr. 1.

4 Slaughter for export only was as follows, in thousands: 1930, 429; 1931, 425; 1932, 397; 1933, 527; 1934, 653.

5 Preliminary estimates.

Bureau of Agricultural Economics; compiled from official sources and cabled reports from agricultural representatives abroad. Data for earlier years in 1928 Yearbook, table 364.

² Subject to revision.

Inspected slaughter, only, was as follows, in thousands: 1930, 978; 1931, 963; 1932, 937; 1933, 1,092; 1934, 1,347.

Table 330.—Beef and beef products: International trade, average 1925-29, annual 1931-33

			1001					
				Calenda	ar year			
Country	Average	1925-29	198	31	193	12	198	13 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTIN G COUNTRIES Argentina	1,000 pounds 1,552,601 287,281	0	1,000 pounds 1, 115, 653 195, 823	0	1,000 pounds 1,054,298 204,101	1,000 pounds 30 0	1,000 pounds 1,020,678	1,000 pounds 35
Australia Austra	284, 476 237, 540 144, 303 115, 286 109, 765 42, 516 27, 793 23, 193	1, 711 159, 721 84, 233 626 7, 221 1, 867 12, 359 8, 397	214, 821 148, 062 100, 891 105, 358 150, 182 7, 809 77, 568 22, 240	4, 765 130, 890 29, 433 434 2, 289 502 10, 583 13, 317	252, 998 55, 047 89, 748 117, 398 89, 114 6, 942 35, 301 16, 292	498 72, 345 30, 373 487 183 559 9, 078 3, 338	238, 255 38, 051 95, 020 167, 436 84, 022 10, 992 33, 206 23, 478	273 58, 530 49, 736 399 464 342 7, 011 6, 59
Rumania. Irish Free State Austria. China. Hungary	8, 324 8, 992 5, 337 5, 071 4, 834	2, 032 4 471 8, 581 5, 149 1, 619 207	21, 520 8, 659 3, 928 5, 237 585 4, 408	1, 049 274 5, 010 13, 309 1, 475 31	4, 483 2, 674 2, 792 2, 956 5 68 3, 123	994 357 5, 224 14, 003 \$ 1, 512 17	2, 852 5, 125 2, 938 73 1, 774	73 40 9, 53 1, 69
Total	2, 874, 958	294, 287	2, 182, 744	213, 473	1, 937, 285	138, 998	1, 723, 900	135, 76
PRINCIPAL IMPORTING COUNTRIES								
United KingdomGermanyFranceBelgiumJapanCuba	4, 267 35, 552 37, 950	1, 795, 364 386, 911 147, 055 122, 165 68, 201 44, 490	40, 863 9, 948 33, 712 14, 909 0	1, 667, 824 74, 976 138, 494 103, 985 74, 426	25, 224 3, 334 30, 224 6, 685 0	1, 499, 335 79, 684 80, 275 52, 233 47, 904 19, 416	3, 891 1, 329 21, 858 4, 480 0	1, 490, 22 82, 62 68, 73 50, 60 23, 66
Sweden	8,759	23, 611 19, 664 16, 785 14, 365 11, 346	1, 136 6, 190 25 1, 574 775	23, 984 17, 431 16, 981 19, 422 10, 904 13, 723	258 5, 177 28 4, 537 685	16, 963 14, 237 24, 683 4, 168 15, 559 4, 776	304 5, 011 33 2, 862 716	17, 41 17, 20 31, 50 3, 36 13, 53
Philippine Islands Czechoslovakia British Malaya Switzerland Finland Egypt Chile	682 799 89	11, 013 8, 165 6, 958 6, 373 5, 235 4, 767 3, 645	0 37 560 559 474 7	7, 202 7, 845 6, 173 6, 907 2, 580 2, 277 2, 471	0 10 460 131 33 19 133	936 4,953 7,844 2,933 1,851	7 411 125 0	24 4, 28 8, 43 2, 11 2, 07
Total		2, 696, 113	110, 878	2, 197, 605	-	1, 877, 949	41, 190	1, 816, 04

Preliminary.
 Year ended June 30.
 The import figures include "canned beef and yeat" as taken from reports of the Bureau of Animal Indus-

try.
4 year average.
5 Does not include Manchuria after June 30, 1932.
6 Includes only oleomargarine, tallow, and artificial butter. Meat imports into Italy are not separated as to kinds, although a large quantity of unclassified fresh and frozen meat is undoubtedly beef.

Bureau of Agricultural Economics, official sources. This table includes fresh, pickled or salted, and canned beef, tallow, oleo oil, oleo stock, oleo stearin, and oleomargarine.

Table 331.—Beef: Stocks in cold storage warehouses and meat-packing establishments. United States, 1925-34

					351	Y	Y11	A	C	0	``	
Kind and year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July I	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec.
Deaf frames.	1,000	1,000	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.
Beef, frozen: 1925	lb.		101, 599				36, 452					
1926	59, 850								21, 311			59, 60
1927	72, 352								17, 241			
1928	54, 968									22, 463		
1929	77, 051			60,664	51, 442			31,085	32, 122	38, 996		70, 39
1930	77, 230	72, 692					46, 819					
1931	55, 649				34, 082					20,861		
1932	37, 812											27, 84
1933	29, 279											
1934 1	58, 377	51, 960	44, 481	36, 259	27, 866	24, 256	26, 988	40, 363	62, 798	75, 580	89, 387	109, 09
Beef, cured and								Į				
in process of cure:	l		ł				l				1	
1925	28, 930	28, 758	29, 210	28, 634	28, 952	27, 731	25 102	22,704	22, 335	20, 964	20, 473	23, 12
1926	25, 146											
1927	28, 521											
1928	21, 979			19, 631							16, 401	19, 44
1929	21, 862	21, 873	21, 285	20,943			16, 296	14,845		17,438		23, 05
1930	26, 653											
1931	19, 636											
1932	15, 387											
1933	13, 591											
1934 1	20, 855	20, 988	20, 264	19,589	18, 724	18, 290	18, 483	21, 182	17, 277	16, 995	19,012	22, 86

¹ Stocks of meat from "drought-stricken livestock" purchased by Federal Surplus Relief Corporation are not included in these figures for year 1934.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 365.

Table 332.—Cattle-tick eradication: Progress and status of the work Dec. 1, 1934

	Quara countie		Released	l counties t 1934	to Dec. 1,	Releas		unties Tov. 1-		ree on
State	July 1, 1906	Dec. 1, 1934	Tick free	With 1 or more infested herds	Total counties released	1930	1931	1932	1933	1934
Alabama Arkansas California Florida Georgia Kentucky Louisiana Mississippi Missouri North Carolina Oklahoma South Carolina Tennessee Texas Virginia	2 64 82 4 73 61 46 42 198 31	0 0 0 11 0 0 24 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	67 63 15 48 158 2 16 74 4 73 61 46 42 130 31	0 12 0 8 0 0 24 8 0 0 0 0 0 0 32	67 75 16 56 158 2 40 82 4 73 61 46 42 162	64 53 15 33 158 2 10 78 4 70 61 46 42 116 31	67 55 15 41 158 2 17 77 4 73 61 46 42 113 30	67 60 15 46 157 2 10 77 4 73 61 46 42 126 31	66 64 15 44 158 2 14 79 4 73 60 42 135 31	67 63 15 48 158 2 16 74 73 61 46 42 130 31
Total	985	71	830	84	914	783	801	817	833	83

Bureau of Animal Industry.

Table 333.—Hogs, including pigs: Number on farms and farm value per head, by States, Jan. 1, 1932-35

			, 100%		T					
		Nun	ber		Fa	rm value	per head	1 1		
State and division	1932	1933	1934	1935 2	1932	1933	1934	1935		
Maine	Thou- sands 53 15 32 99 5 25 205 78 655	Thou- sands 55 16 34 84 5 25 213 75 707	Thou- sands 53 14 29 86 5 22 204 66 665	Thou- sands 48 13 26 80 4 21 173 63 565	Dollars 9. 30 9. 90 7. 70 8. 90 8. 00 9. 20 8. 70 10. 70 8. 70	Dollars 7. 00 7. 60 5. 80 6. 30 6. 80 6. 60 6. 40 6. 70 6. 00	Dollars 6. 40 7. 10 6. 00 6. 30 7. 40 6. 80 6. 60 7. 30 6. 10	Dollars 8. 60 9. 00 8. 20 8. 60 9. 80 9. 80 9. 80 8. 40 10. 10 8. 00		
North Atlantic	1, 167	1, 214	1, 144	993	8. 85	6. 20	6. 33	8. 35		
Ohio Indiana Illinois Michigan Wisconsin	2, 072 2, 953 4, 900 661 1, 658	2, 601 3, 691 5, 537 793 1, 611	2, 393 3, 802 5, 260 730 1, 514	1, 651 2, 357 3, 209 518 1, 151	6. 60 6. 80 6. 80 6. 90 5. 80	4. 40 4. 50 4. 60 4. 70 4. 20	4. 00 3. 60 4. 30 4. 10 4. 40	6. 50 6. 00 8. 00 6. 40 7. 60		
East North Central	12, 244	14, 233	13, 699	8, 886	6. 63	4. 52	4. 05	7. 02		
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	3, 884 11, 140 4, 100 751 1, 950 5, 334 3, 109	3, 496 10, 813 4, 674 638 2, 048 4, 534 3, 264	3, 321 10, 813 4, 113 434 1, 229 4, 715 2, 611	2, 026 6, 272 2, 303 269 676 2, 169 1, 410	6. 40 6. 40 5. 60 5. 50 5. 50 6. 00 5. 40	4. 50 4. 50 3. 80 3. 60 4. 00 4. 30 3. 80	4. 40 4. 70 3. 50 3. 60 4. 10 4. 40 3. 60	7. 50 8. 00 4. 60 5. 40 5. 50 6. 20 5. 50		
West North Central	30, 268	29, 467	27, 236	15, 125	6.04	4. 21	4, 30	6. 78		
North Central	42, 512	43, 700	40, 935	24, 011	6. 21	4. 31	4. 22	6.88		
Delaware. Maryland. Virginia. West Virginia. North Carolina. South Carolina. Georgia. Florida.		22 176 579 211 996 562 1,376 513	23 181 562 207 936 478 1,362 477	22 147 506 207 842 449 1, 158 405	7. 50 6. 10 7. 50 7. 70 5. 70 5. 00	5. 10 4. 70 3. 40	5. 00 4. 70 4. 40 4. 70 5. 50 5. 00 3. 60 3. 20	7. 00 6. 44 6. 14 5. 84 7. 44 5. 74 4. 88 3. 5		
South Atlantic	4, 252	4, 435	4, 226	3, 736	5.84	4. 14	4. 35	5. 6		
Kentucky. Tennessee. Alabama. Mississippi Arkansas. Louisiana. Oklahoma. Texas.		1, 101 1, 236 1, 053 1, 010 1, 100 672 1, 506 2, 033	990 990 632	831 966 844 881 742 566 648 1, 226	6. 30 5. 40 5. 30 5. 20 6. 50 5. 00	4. 00 4. 20 3. 50 3. 50 4. 10 3. 00	3.70 4.10 3.50 3.20 3.90 2.60	5. 6 5. 7 4. 9 3. 9 4. 9 3. 8		
South Central	8, 393	9, 711	8, 630	6, 704	5. 58	3. 66	3.47			
Montana Idaho Wyoming Colorado. New Mexico Arizona Utah Nevada Washington Oregon. California	324 123 624 74	333 98 536 78 24 76 19 220 221	87 440 58 18 68 17 202	15 15 15 15	5.00 7 5.40 8 5.70 9 5.90 1 5.10 8 6.70 9 6.80 9 6.50	3. 40 3. 40 3. 10 3. 90 4. 10 3. 90 4. 50 4. 50 4. 30	3, 20 3, 40 3, 40 3, 40 3, 60 4, 70 4, 10 4, 50 4, 20 4, 30	5.86 4.28 5.48 5.42 6.42 6.63		
		2, 538	2, 242	1,56	5,80	3.88	3.90	6.2		
Western	-, -,									

¹ Sum of total value of subgroups (classified by age and sex), divided by total number and rounded to nearest dime for States. Division and United States averages not rounded. State figures are new weighted value series, not comparable to State figures previously published for the years prior to 1925.

§ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 334.—Hogs: Number on farms and farm value per head in the United States Jan. 1., 1900-1935

Year	Number ¹	Farm value per head Jan. 1 ²	Year	Number ¹	Farm value per head Jan. 1 ²	Year	Number 1	Farm value per head Jan. 1 ²
1900 3 1900	49, 300	Dollars 5. 28 6. 53 7. 43 8. 22 6. 50 6. 33 6. 53 8. 05 6. 39 6. 92	1912	Thou-sands 55, 700 51, 800 57, 000 58, 700 61, 200 63, 800 59, 346 60, 159 58, 942 59, 849 69, 304 66, 576	Dollars 8. 46 10. 42 10. 99 10. 43 8. 88 12. 42 20. 65 23. 28 20. 00 13. 63 10. 58 12. 29 10. 30	1985 3 1925 1926 1927 1928 1929 1929 1930 1930 1931 1932 1933 1934 1935 4	Thou-sands 50,854 55,776 52,085 55,468 61,772 58,789 56,288 55,301 54,399 58,988 61,598 57,177 37,007	Dollars 13. 15 15. 66 17. 19 18. 17 12. 94 13. 46 6. 13 4. 22 4. 14 6. 41

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

Table 335.—Hogs: Numbers in countries having 150,000 and over, averages 1921-25 and 1926-30, annual 1930-33

Country	Date or month	Ave	rage	1930	1931	1932	1933
33444,	of estimates	1921-251	1926-301				
NORTH AND CENTRAL AMERICA AND WEST INDIES		Thou-	Thou-	Thou-	Thou-	Thou-	Thou-
		sands	sands	sands	sands	sands	sands
United States	January I	62, 088	56, 683	·55, 301	54, 399	58, 988	² 61, 598
Canada	June	4, 344	4, 387	4,000	4,717	4, 639	3,801
Mexico	ao	3 1, 125	3,300	4 3, 698 298			
HondurasSalvador		(200) (330)	298 335	4 335			
		(591)	591	591			
Cuba Dominican Republic	Mor	866	1,100	1, 100			
Haiti	TATERA	(170)	203	240	260	250	350
				240	200	230	330
Estimated total 5		70, 300	67, 600				
SOUTH AMERICA							
Colombia		1.352	1,400	1 434		1 600	
ColombiaVenezuela		512	(512)	1, 101		1,000	
Ecuador		150	153		200		
Ecuador Peru	February-April	429	4 089	6 689	200		
Bolivia Chile Brazii	- conducty express	362	375	390	398		
Chile		255	4 331	4 331	-		
Brazil	September	4 716, 169	(22, 099)		22,099	21 615	
Urnguay		278	4 308	4 308	,		
Uruguay Argentina	January 1 8	1, 437	4 9 3, 769	4 9 3, 769			
Estimated total			<u> </u>				
		21,000	29, 800				
EUROPE			1				
England and Wales	June	2, 658	2,508	2, 310	2,783	3, 185	3,069
Scotland	do	167	165	143	162	165	167
Northern Ireland	do	134	206	216	236	220	271
Irish Free State	do	947	1.048	1, 052	1, 227	1, 108	931
Norway 10	do	216	303	339	317	304	319
Sweden	September or	9 1, 056	1,574	1, 761	1,724	1,462	1,713
	October.		1 .				1
Denmark Netherlands	July	2, 314	3,741	4, 872	5, 453	11 4, 886	4, 407
Netherlands	May-June	1,519	2,018	2, 018	12 2, 434	12 2, 244	13 2, 112
Belgium	January 1 8	1,081	1,159	1, 237	1, 250	1, 235	1, 246
France	do.8	5, 302	5,942	6, 102	6, 329	6, 398	6, 488
France. Spain. Portugal Italy	do.8	4,500	5,024			5, 102	
Fortugal	-=	1,041	4 1, 163	6 1, 163	I		
taly	May-April	2, 630	3, 086	4 3, 322			
Switzerland Germany	April	640	782	(926)			± 897
Germany	January 1 8	15, 776	19,715	19, 944	23, 442	23,808	14 22, 859
Austria Czechoslovakia		1,399 2,201	1,965	4 9 1, 965 4 15 3, 088		2, 576	1-2-2-2-

See footnotes at end of table.

¹ Figures for 1900-1919 are tentative revised estimates of the Bureau of Agricultural Economics.

² Data for 1900-1925 are an old series for all hogs as reported, adjusted on basis average relationship between the new and the old series for 1926-28. Old series was shown in 1928 Yearbook. Conversion factor was 1.057 (base was old series). Data for 1926-35 are a new series, referred to above, of average values by age and sex classification weighted by numbers in each class.

³ Italic figures are from the census. Census dates were June 1, 1900; Apr. 15, 1910; Jan. 1, 1920, and 1925; Apr. 1, 1930. 1900, 1910, and 1930 include spring-born pigs.

Table 335.—Hogs: Numbers in countries having 150,000 and over, averages 1921-25 and 1926-30. annual 1930-33-Continued

Country	Date or month of estimates	Ave	rage	1930	1931	1932	1933
	or estimates	1921-251	1926-301			1002	1000
EUROPE—continued Hungary Yugoslavia. Greece. Bulgaria.	January 1 January 1	Thou- sands 2, 424 2, 819 390 832	Thou- sands 2, 503 2, 743 422 1, 002 2, 915	Thou- sands 2, 362 (2, 675) 4 276 6 1, 002	Thou- sands 2, 715 2, 924 335	Thou- sands 2, 361 3, 133 423	Thou- sands 1, 899 2, 863 472
Rumania Poland Lithuania Latvia Estonia	January 1 8 June July	1,486 465 299	5, 736 1, 189 499 317	2, 412 6, 047 944 523 290	7, 321 1, 207 712 323	3, 221 5, 844 1, 338 582 303	2, 964 5, 753 1, 233 586 277
Finland Union of Soviet Socialist Re- publics	September Summer	378 17,680	404 21, 040	395 13, 600	446 14, 400	414 11,600	12,068
Estimated total exclud- ing Union of Soviet Socialist Republics ⁵		61,000	71, 100				
AFRICA French West Africa 18. Angola. Union of South Africa Madagascar. Estimated total 4.	April	151 266 888 369 2,300	210 285 888 375 2, 500	180 272 963 415	177 287 479	491	
ASIA India (Portuguese) China (including Turkistan, Manchuria, and Inner Mongolia)		(250) 19 70, 600	250 (80, 000)	6 250			²⁰ 95, 000
Japan Chosen Taiwan French Indo-China	January 1 8do.8do.8do.8	590 1, 078 1, 302 2, 767	688 1, 244 1, 619 2, 587 (864)	706 1, 328 1, 754 2, 808	742 1,387 1,750 2,925	947 1, 348 1, 739 2, 989	926 1, 339 1, 754
Federated Malay States Straits Settlements Philippine Islands Netherlands Indies: Outer pos- sessions	January 18do.8	220 2, 039 783	96 132 2, 236 842	166 120 2, 454	190 105 2, 775		995
Estimated total excluding Union of Soviet Social- ist Republics. ⁵		81, 100	91, 000				
OCEANIA Australia New Zealand Estimated total ⁸	January 1	918 396 1,400	985 525 1,600	1, 018 488	1,072 476	1, 168 513	1, 162 592
Total countries reporting all periods: To 1933 (29) 21			144, 891	137, 046	145, 310	145, 988	145, 840
Estimated world total in- cluding Union of Soviet Socialist Republics 5 22		254, 800	284, 600				

¹ A verage for 5-year period if available, otherwise for any year or years within that period unless otherwise stated.
2 Number on Jan. 1, 1934, was 57,177,000 head.
3 Incomplete.
4 Census.
5 These totals include interpolations for a few countries not reporting each year and rough estimates for some others.
6 Year 1929 or nearest year.
7 Year 1920.
8 Estimates of countries reporting as of December are considered as of Jan. 1, of following year, i.e., the figures for the number of hogs in France as of Dec. 31, 1929, have been placed in 1930 column, etc.
9 June.
10 Rural communities only.
11 June 20.
12 Unofficial.
13 Apr. 18.
14 Number on Jan. 1, 1934, was 23,890,000 head.
15 May.
16 Number on Jan. 1, 1934, was 3,421,000 head.
17 November

¹⁷ November.

¹⁸ Includes French Sudan. 19 Estimate based on official figures for 1920 for 20 Provinces which supported over 50 percent of the num-

¹⁸ Estimate based on oficial figures for 1920 for 20 Provinces which supported over 50 percent of the number in China in 1914.

20 Estimate based on official figures for 1932 or 1933 for 22 Provinces which supported over 99 percent of the number in China in 1914. The official estimate excluding Turkistan and Inner Mongolia in 1932 or 1933 was 94,395,000. Estimates for this territory and for Manchuria included with China in this table.

21 Comparable totals for number of countries indicated in parenthesis.

22 Estimated world production for the 5 years 1909-13 was as follows (in thousands of head): North America, Central America, and West Indies, 59,700; South America, 23,500; Europe, excluding Union of Soviet Socialist Republics, 71,800; Africa, 2,500; Asia, excluding Union of Soviet Socialist Republics, 86,200; Cesania, 1,400; world including Union of Soviet Socialist Republics, 266,000.

Bureau of Agricultural Economics; official estimates and International Institute of Agriculture unless

otherwise stated.

Figures in parenthesis interpolated. For later figures see the monthly issues of Hog and Pork Prospects and the hog and pork issue of Foreign Crops and Markets.

Table 336.—Hogs: Receipts at principal public stockyards and at public stockyards, 1925-31

Year	Chi- cago	Den- ver	East St. Louis	Fort Worth	Kan- sas City	Oma- ha	South St. Joseph	St.	Sioux City	Total 9 mar- kets ¹	All other stock- yards report- ing	Total all stock- yards re- port- ing 1
1925	Thou-sands 7, 996 7, 093 7, 724 8, 539 8, 193 7, 870 7, 942 6, 602 7, 792 6, 510	Thou-sands 467 497 457 567 539 512 597 652 771 709	Thou-sands 3, 512 3, 536 3, 710 4, 036 3, 865 3, 459 2, 970 2, 626 3, 328 2, 960	Thou-sands 312 217 338 432 402 279 216 255 498 404	Thou-sands 2, 067 2, 036 1, 904 2, 391 2, 476 2, 015 1, 337 1, 356 2, 077 1, 262	Thou-sands 3, 355 2, 647 2, 631 3, 179 3, 166 3, 363 3, 525 3, 078 2, 950 2, 808	Thou-sands 1, 673 1, 462 1, 425 1, 724 1, 627 1, 446 1, 322 1, 226 1, 715 1, 594	Thou-sands 3, 637 3, 451 3, 105 2, 902 2, 759 3, 251 2, 600 2, 742 1, 885	Thou-sands 3, 396 2, 475 2, 322 2, 754 2, 313 2, 317 2, 646 1, 955 2, 287 2, 067	Thou-sands 26, 415 23, 413 23, 616 26, 525 25, 450 24, 021 23, 805 20, 351 24, 160 20, 199	Thou-sands 17, 514 16, 359 17, 795 20, 002 18, 647 16, 753 15, 733 14, 677 16, 217 13, 521	Thou-sands 43, 929 39, 772 41, 411 46, 527 44, 097 40, 774 39, 588 35, 028 40, 377 33, 720

Table 337.—Hogs: Receipts at United States public stockyards, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1925 1926 1927 1928 1929 1930 1931 1932 1933 1 1934	Thou- sands 6, 105 4, 304 4, 252 5, 306 5, 133 4, 720 4, 652 4, 218 3, 388 4, 245	Thou- sands 4, 558 3, 372 3, 308 5, 267 4, 000 3, 781 3, 704 3, 659 2, 700 2, 728	Thou- sands 3, 528 3, 579 3, 754 4, 639 3, 436 3, 294 3, 207 2, 939 2, 638 2, 468	Thou-sands 3, 247 3, 135 3, 142 3, 483 3, 582 3, 255 3, 067 2, 960 2, 798 2, 674	Thou-sands 3, 283 3, 037 3, 613 3, 723 3, 431 3, 293 2, 938 3, 050 3, 143 3, 076	Thou-sands 3, 507 3, 143 3, 775 3, 548 3, 275 3, 215 2, 854 2, 545 3, 361 2, 684	Thou- sands 2, 798 2, 854 3, 046 2, 924 3, 297 2, 918 2, 511 2, 159 2, 871 2, 519	Thou-sands 2, 549 2, 804 3, 042 2, 523 2, 964 2, 617 2, 454 2, 405 3, 924 2, 067	Thou-sands 2, 741 2, 819 2, 565 2, 600 3, 089 2, 799 2, 727 2, 505 6, 494 2, 094	Thou-sands 3, 390 3, 261 3, 039 3, 666 3, 701 3, 441 3, 462 2, 691 2, 521 2, 807	Thou-sands 3, 843 3, 554 3, 666 4, 075 3, 933 3, 439 3, 752 2, 775 3, 207 3, 218	Thou- sands 4, 380 3, 910 4, 209 4, 773 4, 256 4, 002 4, 210 3, 123 3, 332 3, 140	Thou- sands 43, 929 39, 772 41, 411 46, 527 44, 097 40, 774 39, 538 35, 028 40, 377 33, 720

¹ Includes many pigs and sows received for sale on Government account, Aug. 22-Oct. 7, 1933.

Table 338.—Hogs: Monthly average live weight at Chicago, 1925-26 to 1934-35

Year	Oet.	Nov.	Dec.	Jan.	Feb.	Mar.	Aver- age, Oct Mar. ¹	Apr.	May	June	July	Aug.	Sept.	Aver- age, Apr Sept.1
1925-28	Lb. 242 232 235 247 242 227 222 241 239 228	Lb. 228 217 215 238 223 221 217 231 231 215	Lb. 225 220 217 231 224 226 223 229 227 212	Lb. 231 226 225 228 228 235 230 233 227	Lb. 235 229 230 228 231 237 233 236 227	Lb. 245 240 235 238 235 242 237 246 235	Lb. 234 227 226 235 230 231 227 236 231	Lb. 244 239 233 241 234 240 238 251 231	Lb. 247 243 234 239 238 240 239 250 231	Lb. 255 248 239 247 245 251 245 253 238	Lb. 271 257 251 257 258 260 257 248	Lb 281 265 257 265 256 263 258 250	Lb. 287 261 251 259 244 240 260 251 245	Lb. 261 252 244 251 246 248 251 253 240

¹ Simple average.

¹ Rounded totals of complete figures.
² Includes many pigs and sows received for sale on Government account, Aug. 22-Oct. 7, 1933.

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau. Receipts for 1900–1924 are available in 1924 Yearbook, table 500.

Bureau of Agricultural Economics; compiled from data of the livestock and meat reporting service of the Bureau. Earlier data in 1930 Yearbook, table 376.

Bureau of Agricultural Economics; livestock and meat reporting service. Weighted average of packer and shipper purchases. Data for 1900-1923 are available in 1924 Yearbook, table 506, and for 1924 in 1934 Yearbook, table 336.

TABLE 339.—Hogs:	Average price	per 100	pounds received	by	producers,	United
	States, :	1925–26	to 1934–35	·	• ,	

Year	Oct. 15	Nov. 15	Dec.	Jan. 15	Feb.	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Weight- ed aver- age
1925-26	Dol. 11. 16 12. 06 10. 16 9. 55 9. 10 8. 79 4. 70 3. 25 4. 17 5. 20	Dol. 10. 66 11. 45 8. 99 8. 51 8. 54 8. 20 4. 36 3. 05 3. 70 5. 04	Dol. 10. 51 10. 97 8. 14 7. 95 8. 53 7. 44 3. 76 2. 73 2. 92 5. 15	Dol. 10. 99 10. 97 7. 80 8. 18 8. 80 7. 25 3. 76 2. 68 3. 06	Dol. 11. 76 11. 19 7. 61 8. 88 9. 48 6. 81 3. 53 2. 94 3. 87		Dol. 11. 49 10. 41 7. 75 10. 20 9. 17 6. 92 3. 58 3. 21 3. 49	Dol. 11. 97 9. 41 8. 82 9. 96 8. 99 6. 35 2. 96 3. 88 3. 17	Dol. 12. 80 8. 40 8. 70 9. 80 9. 10 5. 70 2. 82 3. 96 3. 52	Dol. 12. 69 8. 58 9. 64 10. 33 8. 38 6. 20 4. 23 3. 98 3. 97	Dol. 11. 66 9. 24 10. 01 10. 28 8. 51 6. 25 4. 06 3. 79 4. 61	Dol. 12.07 9.78 11.17 9.53 9.44 5.44 3.78 3.73 6.04	Dol. 11. 55 10. 28 8. 59 9. 28 8. 95 6. 95 3. 78 3. 36 3. 73

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of hogs Jan. 1, to obtain price for the United States; yearly price obtained by weighting monthly prices by Federally-inspected slaughter. Data for earlier years in 1928 Yearbook, table 382. Only monthly prices are comparable.

Table 340.—Hogs: Average price per 100 pounds at Chicago, by months, 1925-26 to 1934-35

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple aver- age
1925-26 1926-27 1927-28 1928-29 _ 1929-30 1930-31 1931-32 _ 1932-33 _ 1933-34 1934-35	Dol. 11. 31 12. 72 10. 39 9. 57 9. 38 9. 34 5. 09 3. 50 4. 43 5. 60	Dol. 11. 28 11. 80 8. 92 8. 83 9. 06 8. 55 4. 61 3. 34 4. 04 5. 66	Dol. 10. 97 11. 57 8. 32 8. 61 9. 34 7. 92 4. 20 3. 04 3. 25 5. 89	Dol. 12. 02 11. 96 8. 25 9. 22 9. 78 7. 65 4. 00 3. 12 3. 41	Dol. 12. 45 11. 73 8. 08 10. 19 10. 67 7. 06 3. 89 3. 46 4. 39	Dol. 12. 20 11. 28 8. 08 11. 44 10. 17 7. 46 4. 33 3. 88 4. 31	Dol. 12. 33 10. 69 9. 28 11. 41 10. 00 7. 26 3. 85 3. 77 3. 85	Dol. 13. 55 9. 59 9. 67 10. 81 10. 02 6. 53 3. 34 4. 51 3. 51	Dol. 14. 01 8. 78 9. 91 10. 72 9. 52 6. 30 3. 62 4. 49 4. 09	Dol. 12. 51 9. 05 10. 65 11. 20 8. 73 6. 33 4. 58 4. 41 4. 49	Dol. 11. 48 9. 03 11. 53 10. 52 9. 58 5. 98 4. 21 3. 97 5. 89	Dol. 12. 03 10. 22 11. 89 9. 85 9. 76 5. 41 4. 00 4. 24 6. 82	Dol. 12. 18 10. 70 9. 58 10. 20 9. 67 7. 15 4. 14 3. 81 4. 37

Bureau of Agricultural Economics. Compiled from reports of packer and shipper purchases; such purchases do not include pigs, boars, stags, extremely rough sows, or cripples. The yearly figures are the simple average of the October to September prices. These weighted prices do not include processing tax. Tax of 50 cents per 100 pounds was imposed from Nov. 5 to Nov. 30, 1933; \$1 from Dec. 1, 1933, to Jan. 31, 1934; \$1.50 from Feb. 17 Feb. 28; and \$2.25 beginning Mar. 1, 1934.

Data for 1901-24 are available in 1932 Yearbook, table 336.

Table 341.—Hogs: Annual slaughter under Federal inspection, 1907-34, estimated equivalent of Federal inspection, 1900-1906, and estimated total slaughter (including farm) in United States, 1900-1934 1

Year	Federally inspected	Total 2	Year	Federally inspected	Total 2	Year	Federally inspected	Total ²
1900	Thou- sands 29, 294 31, 129 26, 375 26, 971 30, 072 31, 855 31, 610 32, 885 38, 643 31, 395 26, 014 34, 133	Thou-sands 50, 470 51, 870 48, 260 47, 990 49, 987 51, 540 52, 880 54, 088 60, 515 53, 220 47, 076 56, 648	1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923	Thou- sands 33, 053 34, 199 32, 532 38, 381 43, 084 41, 214 41, 812 38, 919 38, 982 42, 114 53, 334	Thou- sands 55, 564 57, 046 55, 501 62, 017 67, 613 56, 901 64, 796 65, 190 61, 890 62, 957 68, 105 79, 843	1924 1925 1928 1927 1928 1929 1930 1930 1931 1931 1932 1933	Thou-sands 52, 873 43, 043 40, 636 43, 633 49, 795 48, 445 44, 266 44, 772 45, 245 47, 226 43, 873	Thou-sands 79, 631 68, 294 65, 779 69, 250 76, 593 74, 945 70, 390 71, 157 74, 021

¹ Federal Meat Inspection Act, effective Oct. 1, 1906. ² Subject to revision.

Bureau of Animal Industry and Bureau of Agricultural Economics. Data for years 1880-99 last printed in 1933 Yearbook, table 330.

Table 342.—Hogs: Shipments, slaughter, value of production, and income, by States, 1933

State and		nents and slaughter	A. A	A. A.	stock	pments, er, feed- , and eding		slaugh- ter	Value of amount con-	Cerbra	Gross in-	Value of pro-
division	Head	Total weight	Head	Total weight	Head	Total weight	Head	Total weight	sumed on farms	from sales	come	duc- tion
Maine	Thou- sands 24	1,000 pounds	sands			1,000 pounds	Thou- sands 27	1,000 pounds 7,290	1,000 dollars 176	1,000 dollars 517	1,000 dollars 693	1,000 dollars 615
N. H	8	2, 080					8	2, 160	43	149	192	164
Vt	16	4, 160			4		27	7,020	143	392	535	459
Mass	56	14, 560			4	400		9, 100	196	857	1, 053	915
R. 1	1	250					5 23	1, 250	31	51	82	79
N V	8 78	2, 080 17, 940	9	104	4	400	160	5, 980 38, 080	151 900	282 1,714	433 2,614	370 2, 343
Ñ. J	78 57	11, 950	2	85	18		40	10,000	293	682	975	888
Pa	262	60, 260	1	84			360	90,000	2, 683	4,407	7,090	6, 503
N. Atl	510	119, 520	5	273	26	3, 050	685	170, 880	4, 616	9, 051	13, 667	12, 336
Ohio	3 701	851, 230	406	25, 327	2	220	600	150,000	5, 155	36, 533	41,688	40, 748
Ohio Ind	4, 867	1, 143, 745	357	25, 373	11	1.320	530	132, 500	4, 806	46, 804	l 51.610	51, 793
III	6, 581	1, 605, 764 137, 350	577 77	46, 592	51	5, 865	650	162, 500	4, 806 5, 411	63,003	68, 414	65, 862 7, 944
Ill Mich Wis	670	137, 350	77	5, 254	16		310	132, 500 162, 500 74, 400 110, 250	1,814	6, 716 14, 952	68, 414 8, 530 17, 995	7,944
W IS	1, 729	380, 380	168	12, 207		100	490	110, 250	3, 043	14, 952	17, 995	16, 668
E. N. Cent.			1,585	114, 753	81	9, 105	2, 580	629, 650		168, 008	188, 237	183, 015
Minn Iowa Mo N. Dak	4, 522	1, 017, 450	469	32, 774	329	36, 190	430	94, 600	2, 725 4, 952	35, 132	37,857	36, 450
lowa	11, 874	2, 790, 390 1, 154 295	616	59, 475	230	26, 450	625	153, 125	4, 952	94, 514	99, 466	99, 612
MIO	5,085	1, 154 295	786 239	50, 357	38	4, 180	650 233	162, 500 55, 920 51, 700 86, 700	5, 250 1, 451	45,066	50, 316	48, 022
S. Dak	2, 613	135, 010	808	13, 766 47, 098 38, 700	4	460		51, 700	1,548	17, 888	6,500 19,436	5, 442 15, 022
Nebr	5. 265	1, 316, 250	473	38, 700	111	11, 100		86, 700	1, 548 2, 733	44, 822	47, 555	46, 471
S. Dak Nebr Kans	5, 265 3, 200	454, 662 1, 316, 250 704, 000	699	43, 255	57	6, 555	400	100,000	2, 733 3, 162	5, 049 17, 888 44, 822 27, 006	19, 436 47, 555 30, 168	26,810
W.N.Cent.	33, 146		<u> </u>	285, 425	769	84, 935	2, 898	704, 545	21, 821	269, 477	291, 298	277, 829
N. Cent	50, 694	11, 690, 526	5, 674	400, 178	850	94, 040	5, 478	1, 334, 195	42, 050	437, 485	479, 535	460, 844
Del	4	760					19	3, 800	108	125	233	220
		9, 625	5	261			155	37, 200	1,311	840	2, 151	2,110
Va	167	36, 740	20	1,094	2 2	200	575	143, 750	4,713	2, 781	7, 494	7, 220
W. va	38 186	5,700	8	477 248		200	210 715	52, 500 157, 300 84, 000	1,825 5,817	908		2, 548 8, 167
8. C	129	24, 720	3	141			400	84, 000	3, 119	1, 245	4, 364	3,938
Va. Va. V. Va. N. C. S. C. Ga.	288 179	43, 200	11	579			1,030	221, 450	6,377	2.343	4,364 8,720 2,386	8,478
Fla	179	5, 740 5, 700 37, 200 24, 720 43, 200 26, 850	6	344			300	42,000	806	1,580	2,386	2, 129
S. Atl	1,046		57	3, 144	4	400	3, 404	742, 000	24, 076	12, 792	36, 868	34, 810
Ку	625	115, 625	58	3, 824	7	525	650	162, 500	5, 372	5, 686	11,058	10, 581
Tenn	527	105, 400	26	1, 487	2	250	650	162, 500 169, 000	5, 087 3, 354	4,866	9.953	9, 291
Ky TennAla	218	34, 880	4	214	1	150	600	120,000	3,354	1,853	5, 207 4, 827	4, 591
		22, 950	2 32	91 1,700	3			124,000		1, 624 2, 489	4,827 5,270	4,633 4,785
ArkLa	157	53, 100 23, 550		1, 700	1 1	300	420	67 200	2, 781 1, 959	1 432	3,391	3,057
Okla	1,058	201, 020	374	21, 418	8	800	415	103, 750	3,072	1,432 8,101 7,776	11, 173	9,072
Okla Tex		201, 020 187, 220		5, 258	6	600	1, 018					
S. Cent	3, 943	743, 745	588	33, 999	30	3, 145	4, 948	1, 126, 130	32, 398	33, 827	66, 225	59, 693
Mont.	169	32, 110	7	472			110	24, 200	625	1,381	2,006	1,940
Idaho	285	54, 150	4	292			75	17, 625	561	2, 141	2,006 2,702	2,492
Wyo	43	8, 170	7	438	8	800	35	8,050	202	301	503	422
Mont Idaho Wyo Colo N. Mex	509	117,070	41	2, 658 128		2, 400	88 32	21, 120	579 183	4, 081 382	4,660	4, 167
Ariz	47 25	9, 400 5, 000		369			10		183 52		565 331	472 285
Utah	45	6,750	1	75		200		7, 200	205	331	536	480
Nev	7	1.190	(.089)	7	1) 9	1,800	64	68	132	122
Wash	180	37, 800	4	305			125	27, 500	632	2, 147 1, 832	2,779 2,349	2,543
Ariz_ Utah Nev_ Wash Oreg_ Oalif	184 644	34, 960 119, 490	14	1,005	11	1, 100 400	103	21, 630 15, 000	517 454	1,832 5,292	2, 349 5, 746	1,927 5,249
West	2, 138		88	5, 896				152, 425	4.074		22, 309	20, 099
U. S	58, 331	13, 164, 676	6,411	443, 490	971	106, 735	15, 213	3, 525, 630	107, 214	511, 390	618, 604	587, 782

¹ Purchases under the Agricultural Adjustment Administration.

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between gross income and value of production arises from the fact that in computing value of production, allowance is made for changes in inventory numbers at the beginning and end of the year, while in computing income these changes are not used.

Table 343.—Hogs: Cholera-control work by Bureau of Animal Industry, 1919-34

	Bureau veterina-	Premises	Demons	trations	Post-	Outbreaks
Year ended June 30	rians en- gaged in work ¹	investi- gated	Number	Hogs treated	mortem examina- tions	reported to Bureau vet- erinarians
1919 1920 1921	180 140 54	93, 512 46, 145 29, 433	3, 037 3, 420	233, 987 347, 702 67, 295	53, 586 10, 963 3, 888	12, 336 9, 788 7, 951
1922	80 71 45 34	47, 137 52, 348 29, 443 24, 060	4, 343 5, 234 3, 178 2, 353	88, 846 108, 562 78, 007 51, 331	5, 390 5, 247 3, 686 2, 383	7, 920 7, 204 7, 225 3, 437
1926 1927 1928	35 37 39 38	20, 599 25, 004 25, 156 28, 939	2, 579 4, 863 4, 444 2, 648	69, 230 97, 917 106, 960 56, 023	2, 446 3, 741 3, 368 3, 326	4, 558 11, 555 6, 941 7, 029
1930 1931 1932 1932	37 36 35 32	26, 858 23, 226 24, 792 28, 897	1,740 1,460 2,066 1,829	35, 158 29, 152 36, 552 37, 523	2, 505 3, 011 3, 722 3, 226	4, 162 3, 388 6, 480 4, 358
1934	30	25, 492	1, 490	29, 585	2, 398	4, 123

¹ Small portion of time occasionally devoted to other work.

Bureau of Animal Industry.

Table 344.—Hogs: Slaughter in specified countries, 1925-34

Year	United States Federally inspected	Canada, total	Germany, inspected slaughter	Denmark, in export slaughter- houses	England and Wales sold off farms for slaughter ¹	Ireland, purchased by bacon curers	Netherlands, slaughter for consumption and export
1925	Thousands 43, 043 40, 636 43, 633 49, 795 48, 445 44, 772 45, 245 47, 226 43, 586	Thousands 5, 720 5, 636 5, 965 5, 880 5, 747 5, 248 6, 187 6, 286 5, 814 (8)	Thousands 12, 090 13, 072 17, 279 19, 480 17, 252 18, 041 20, 520 19, 002 18, 260 19, 414	Thousands 3, 766 3, 833 5, 098 5, 373 4, 994 6, 132 7, 320 7, 841 6, 392 4, 898	Thousands 3, 832 3, 326 3, 968 4, 378 3, 481 4, 152 4, 681	Thousands 915 914 1,064 1,272 1,146 1,034 1,091 1,115 1,221 (4)	Thousands 2, 810 2, 440 3, 041 3, 077 2, 415 2, 746 3, 660 8, 559 2, 796

¹ Years beginning June ¹. Revised estimates on basis of returns published in The Agricultural Output of England and Wales 1930-31, published in 1934.
² Preliminary estimates.
³ Inspected slaughter alone was as follows in thousands: 1933, 2,302; 1934, 2,872.
⁴ Revised estimate of slaughter in the United Kingdom and Irish Free State for year beginning June 1 was as follows: 1925, 4,919; 1926, 4,576; 1927, 5,825; 1928, 6,457; 1929, 4,983; 1930, 4,957; 1931, 6,023; 1932, 6,432; 1933, 6,035 (see note 1).

Bureau of Agricultural Economics; compiled from official sources and cabled reports from agricultural representatives abroad.

For earlier years see 1931 Yearbook, table 387.

Table 345.—Lard. American: Average price per pound at Liverpool. 1925-31 PRIME WESTERN STEAM I

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Cents 18, 0 17, 2 14, 3 13, 6 13, 4 11, 9 3 10, 6 6, 7 3 6, 0 6, 3	Cents 2 17. 5 16. 5 14. 4 12. 9 13. 5 12. 2 9. 8 6. 5 5. 8 6. 8	Cents 18. 7 16. 5 14. 4 13. 0 13. 9 11. 8 10. 5 6. 7 6. 2 6. 7	Cents 17. 8 16. 0 14. 3 13. 3 13. 5 11. 8 10. 3 6. 3 6. 4 5. 7	Cents 17. 6 2 17. 6 14. 1 13. 4 11. 8 9. 5 5. 8 8. 2 5. 3	Cents 19. 1 18. 4 14. 4 13. 3 13. 5 11. 3 10. 0 5. 6 8. 2 5. 5	Cents 19.3 17.8 14.3 13.7 13.9 11.2 9.5 6.9 8.7 5.7	Cents 19. 2 17. 0 13. 8 13. 9 13. 8 12. 3 8. 8 7. 0 7. 7	Cents 19. 2 16. 6 14. 6 14. 4 13. 5 13. 2 8. 7 7. 0 7. 5 9. 7	Cents 17. 9 15. 8 14. 4 13. 9 12. 7 13. 2 9. 0 6. 1 7. 4 9. 3	Cents 17. 8 14. 2 14. 0 13. 4 12. 1 12. 5 8. 2 2 7. 6 7. 5 10. 2	Cents 16.6 14.3 13.5 13.2 11.8 11.3 7.3 6.4 6.4 11.4	Cents 18. 2 16. 5 14. 2 13. 5 13. 2 12. 0 9. 3 6. 6 7. 2 7. 5

REFINED 4

1931 1932 1933 1934	6.7	6. 9 5. 9 7. 0		6. 5 6. 5 6. 0		6. 1 8. 2 5. 7	9. 5 7. 2 8. 8 5. 8	7, 5 7, 8	8. 9 7. 6 7. 6 9. 5	7.5	8. 4 7. 3 7. 6 10. 4	8. 1 6. 8 6. 7 11. 2	
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¹ Average price in tierces. ² 2 quotations only.

Bureau of Agricultural Economics. Compiled as follows: Prime western steam, Manchester Guardian, averages of Friday quotations; refined, monthly reports of H. E. Reed, foreign agricultural representative, London, average of daily quotations.

Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period

January 1926-August 1931, when par of exchange was used.

Table 346.—Lard, refined: Average price per 100 pounds at Chicago, by months, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Dol. 17. 59 16. 81 13. 59 12. 50 12. 75 11. 45 9. 62 6. 50 5. 69 6. 32	Dol. 17. 03 16. 44 13. 72 11. 60 12. 75 12. 38 8. 94 6. 53 5. 00 7. 12	Dol. 18. 25 16. 70 14. 38 11. 50 13. 31 12. 12 10. 00 6. 70 5. 50 7. 88	Dol. 17. 07 16. 75 14. 32 12. 50 13. 25 11. 65 10. 00 6. 09 7. 50	Dol. 16. 50 17. 13 14. 12 13. 10 12. 85 11. 50 9. 50 7. 23 7. 00	Dol. 18. 13 18. 48 13. 35 13. 50 12. 85 11. 00 9. 53 5. 33 7. 01 7. 31	Dol. 18. 42 18. 00 12. 25 14. 00 13. 22 10. 50 8. 65 6. 96 7. 53 7. 56	Dol. 18. 94 17. 38 12. 54 14. 70 13. 56 12. 44 8. 32 7. 00 6. 65 9. 53	Dol. 18. 95 17. 50 14. 25 15. 25 13. 81 14. 25 9. 00 6. 75 6. 31 11. 25	Dol. 18. 75 16. 75 14. 50 14. 40 13. 17 13. 94 8. 58 6. 25 6. 73 10. 88	Dol. 18. 50 15. 75 13. 60 13. 62 12. 21 12. 31 8. 47 6. 19 6. 98 11. 75	Dol. 16. 67 15. 25 13. 25 12. 88 11. 94 10. 70 7. 65 5. 28 6. 25 11. 97	Dol. 17. 90 16. 91 13. 66 13. 30 12. 97 12. 02 9. 02 6. 25 6. 42 8. 84

Bureau of Agricultural Economics. Compiled from data of the livestock and meat reporting service of the Bureau. Beginning January 1927 prices represent refined lard in hardwood tubs, earlier prices represent pure lard in tierces. Prices 1905 to December 1924 available in 1927 Yearbook, table 373.

³¹ quotation only.

⁴ Average price in boxes.

TABLE 347.—Pork and lard: Stocks in cold-storage warehouses and meat-packing establishments, United States, 1925-34

Product and	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
year		l	Ì	İ	ł		1		1	1		
Dry salt pork,		i		İ	ļ	}		ļ		}		
cured and in			l	1	İ	l	İ	1		İ		
process of	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1,000
cure:	7b.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1925	118, 718	136, 125	150, 819	142, 950	145, 548	142, 292	162 518	164 374	159 555	128 500	106 011	96,746
1926	119, 617	138, 005	144, 071	151, 286	140, 324	136, 801	148 164	168 889	172 786	143 579	08 591	66, 765
1927	68 202	86, 135	101, 156	124, 676	129, 637	143, 143	173 256	185 020	178 107	140, 490	100,022	77, 240
1928	97 33	119, 751	160, 609	178, 012	173, 652	169, 663	174 906	184 473	156 462	125 800	101 102	
1929	143 01	167, 561	179, 776	178, 595	185, 580	171 450	163 805	172 300	160, 510	120,000	111 000	102, 440
1930	107 789	116 288	123, 740	115 653	110 303	105 013	100,000	1114 005	07 927	71 1/2	43, 194	88,782
1931	70 189	108, 394	120, 278	141 225	147 005	148 689	154 040	1169 505	159 507	116 190	79, 453	48,931
1932	87 189	103, 827	122 902	124 249	127 146	198 493	119 009	111 910	100,007	01 255	65, 337	63, 121
1932	80 28	81, 885	86 848	87 030	80 216	105 RAF	121 956	1146 202	144 999	196 277	92,779	
1934 2	07 30	110, 674	112 582	108 538	107 690	08 450	01 064	01 617	62 720	50 709	50, 682	
	01,00	1110,015	112,000	1200, 000	101,020	00, 200	01,003	91,011	00, 102	00, 100	00,002	52, 906
Pickled 3 pork,	1		1		1		Ì	1	1			
cured and in		l	l	ļ		İ	1	1	l	1		ļ
process of		1	1	1	1	1		1	1	1	1	
cure: 1925	206 25	1443 035	182 300	JAR DOC	187 305	125 121	407 B16	272 000	220 156	004 400	020 004	001 100
1920	204 84	2 319, 726	245 881	246 040	226 001	220, 201	222 201	240 695	220, 200	202, 200	200, 084	201, 123
1926	206 00	1352, 681	202 649	1940, 035	125 085	120,000	1000, 000	0440, 007	1000, 020	241 460	1000 550	200, 222
	220, 80	5 370, 916	181 284	1406 300	180, 060	150 979	164 996	1400, 743	1251 024	1041, 100	1209, 000	270, 910
		7 424, 921	472 016	450, 044	150 060	1449 044	1490 215	7 410 840	200, 750	1249 09	200, 300	292, 020
	200 10	392, 123	1410, 510	1200, 012	111 706	200 402	206 916	1900 100	1004, 100	1022, 000	1040 400	310, 100
1930	200, 12	0 402, 448	452 049	1200, 020	1411,700	1084, 400	11405 000	1000, 104	1048, 014	1200, 877	1248, 400	280, 030
1931	048, 01	1000 079	145 946	410 805	71490, 777	1404, 027	2411 900	0004, 420	011, 900	1200 200	1247, 980	204, 200
1932	210 70	1000, 216	260 100	270 180	1976 957	1990 109	111, 200	1499 045	1414 001	1020, 000	1000, 002	291, 177
1933		1350, 114 2442, 438	197 044	1001 046	200 616	1000, 104	20, 740	270 801	200,000	1225 016	1024, 700	365, 766
	402, 03	444 4, 400	1201, 029	1001, 220	002, 010	1910, 100	308, 384	6 9 1 U, U90	320, 318	3000, 211	1000, 010	360, 332
Frozen pork:	100 10	100 040	021 024	010 200	201 244	100 641	140 50	191 091	02 070	E4 00.	00.010	
1925	130, 12	5 199, 642	201, 209	100,000	201, 240	1150,040	100, 021	1131, 930	98,078	04, 204	29,910	
1926	57,90	98, 31	120, 110	102 725	124,000	1117,500	120, 70	7014 605	1119, 994	1100 000	49,376	
1927	97,00	150, 25	111,010	190, 100	204,000	000 001	00 5 800	214,007	101, 0/2	120,00	76, 644	,,
1928		1104, 97	1001,040	0000 754	1000, 90	209, 020	2400, 020	240, 719	173, 017	1110,000	66,049	
1929	151, 81	1 245, 798	291, 000	289, 709	200, 110	200, 291	247, 810	229, 397	170, 131	1119, 204	75,910	
1930	145, 07	8 178, 09	217, 942	200, 417	189, 692	170, 80	174, 240	1107, 107	124, 043	92, 30	64, 127	
1931		4 215, 42	2/1, 088	2/0,020	266, 491	244, 74	210, 799	120,000	129, 571	1 01,000	53,456	
1932		8 187, 05										
1933	101,79	3 143, 08	104, 881	1103, 032	100, 88	175, 80	212, 739	1228, 177	1194, 922	128, 49	75,769	81,985
	129,70	3 177, 295	184, 330	101,430	100,80	100,300	101, 90	101, 204	101, 84	130, 24	123,077	158, 675
Lard: 1	0. 0.				1			14 00	111 80		07 070	
1925	81,04	9 112, 70	101, 92	150, 187	1151, 491	138, 293	140, 911	91140, 924	1114, 724	1 71,020	37, 256	
1926	42,47	8 64, 18	70, 140	1 99, 10	98,368	1100, 824	120, 52	1100,077	101, 230	0110,000	72,355	
1927	49,99	2 69, 57	77, 100	92,06	99,01	1111, 970	1014 /510	211/8, 130	107,010	1106 00	72, 121	
1928	54,85	5 84,00	1121, 082	104, 500	173, 088	1186, 07	1100 47	J204, 939	1177, 880	120, 89	83, 474	
1929	. 85, 21	7 140, 52	173,864	179,42	1184, 748	1186, 490	1189, 69	# ZU3, U1(1120,08	100,09	99,845	
1930		8 92, 17										
1931		4 62, 62	1 74, 977	78, 249	95, 693	103, 366	115, 56	1121, 926	96, 047	1 69, 29	39,766	
1932	. 51, 22		92, 86	1105, 63	111,00	(128, 103)	130, 36	3 121, 618	100, 57	70, 650	34,410	
1933		8 52, 84						0 219, 259				
1934	. [132, 51	0 168, 75	5 176, 044	E[173, 778	5 179,098	s 18 2, 24(µ195, 130	209, 497	(µ67, 150	128,05	1/105, 518	1103, 827
	1	1	}	1	1	1	1	1	1	1	1	1

¹ Lard includes all prime steam, kettle-rendered, neutral, and other pure lards. It does not include lard

substitues nor compounds.

Stocks of meat purchased under the emergency hog-control program by Federal Surplus Relief Corporation are not included in these figures for year 1934.

Pickled pork includes sweet-pickled, plain-brine, and barreled pork.

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 390.

Table 348.—Hogs and hog products: International trade, average 1925-29, annual 1931-33

•				Calend	or year			
Country	Average	1925-29	19	31	1	932	193	3 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES United States Denmark Netherlands Irish Free State Canada Poland Sweden Hungary New Zealand China Argentina Estonia Australia 3	557, 264 249, 396 92, 656 90, 757 48, 032 41, 205 26, 512 13, 177 12, 824	1,000 pounds 10,459 2,869 15,089 15,089 55,011 17,247 37,238 9,796 84 355 413 42 289 2,119	1,000 pounds 750,822 897,558 285,673 84,901 22,269 161,306 67,870 12,049 13,612 9,807 14,116 6,906 6,906	1,000 pounds 3,976 2,249 4,883 56,056 5,318 621 4,940 0 0 255 16 0 173	1,000 pounds 679,229 923,307 257,759 61,271 50,947 138,357 49,750 8,116 16,336 26,437 24,351 9,056 11,737	1,000 pounds 5,774 1,166 3,134 21,664 3,671 41 3,523 0 1 22,023 9 0 17	1,000 pounds 738,156 698,653 193,699 57,838 82,235 101,229 47,593 13,886 36,401 8,817 35,336 8,750 9,921	1,000 pounds 2,926 860 1,872 314 5,390 24 4,844 0 3 3 1,510 8 0
Total	2, 285, 198	150, 691	2, 338, 657	78, 487	2, 236, 653	41, 023	2, 032, 514	17, 783
PRINCIPAL IMPORTING COUNTRIES								
United Kingdom. Germany Cuba. France. Czechoslovakia. Mexico. Austria. Belgium. Italy. Frinland. Peru. Norway. Philippine Islands. Switzerland. Spain. Union of South Africa. Chile	3, 135 4, 018 12 673 7, 184 3, 212 379 6	1, 371, 607 322, 127 130, 313 88, 097 81, 017 58, 269 33, 382 22, 099 16, 850 12, 024 11, 692 8, 285 7, 015 6, 765 2, 569 2, 484 1, 398 473	6, 110 11, 655 0 1, 100 2, 074 1 2, 125 2, 602 2, 679 3, 753 0 47 0 17 886 4, 023 774 774 200	1, 702, 810 266, 135 64, 066 71, 982 63, 341 47, 615 43, 111 47, 399 3, 447 4, 731 2, 405 2, 028 8, 334 5, 366 405 273 1, 049	5, 681 1, 369 0 824 716 0 11 1, 426 1, 932 4, 470 35 0 25 271 3, 083 355 239	1, 720, 098 325, 259 34, 868 30, 027 48, 252 38, 443 19, 836 39, 362 15, 568 4, 681 2, 084 3, 352 8, 619 1, 959 387 257 664	2, 284 994 904 10 827 3600 12 11 2, 369 5, 934 3, 059 0 154 21, 267 2, 448 205 78	1, 540, 469 228, 962 35, 760 36, 928 36, 983 12, 851 33, 663 11, 772 6, 907 2, 965 3, 103 181 651 959
Total	32, 980	2, 176, 466	38, 046	2, 334, 735	20, 668	2, 293, 717	42, 697	1, 951, 154

Bureau of Agricultural Ecomonics; official sources.

These figures comprise: Pork, fresh, canned, pickled, smoked, bacon, Cumberland sides, Wiltshire sides, hams and shoulders, lard, lard compound, neutral lard, hog casings, lard oil, heads and feet.

Table 349.—Bacon and hams, green, firsts: Average price per pound at British markets, 1925-34

Year	Bacon, Wi	tshire sides	at Bristol	Bacon, American	Ham, American
	Danish	Swedish	British	bellies, at Liverpool	short cut, at Liverpool
1925 1926 1927 1928 1929 1930 1941 1931 1932 1933	Cents 27. 5 27. 9 21. 2 21. 2 24. 5 20. 6 13. 2 9. 2 13. 6 20. 8	Cents 25. 6 26. 2 19. 3 19. 9 12. 2 8. 8 14. 4 20. 0	Cents 30. 1 32. 3 26. 9 25. 8 28. 3 27. 4 19. 6 13. 5 17. 2 21. 8	Cents 25. 9 23. 8 20. 0 18. 4 19. 5 2 18. 7 12. 6 3 8. 8 2 11. 0 4 16. 6	Cents 26. 1 28. 8 22. 9 22. 1 23. 8 21. 9 16. 6 11. 6 13. 9 20. 5

¹ Entire half of hog in 1 piece, head off, backbone out, ribs in. ² 11 months. ³ 10 months. ⁴ 6 months.

Preliminary.
 Does not include Manchuria after June 30, 1932.

³ Year ended June 30.

⁴⁻year average.

Bureau of Agricultural Economics. Compiled from Agricultural Market Report, Ministry of Agriculture and Fisheries, Great Britain; average of weekly averages.

Converted at monthly average rates of exchange as given in Federal Reserve Bulletins, except for period January 1926-August 1931, when par of exchange was used.

Table 350.—Lard: International trade, average 1925-29, annual 1930-33

					Calend	ar year				
Country	Averag	e 1925–29	19	30	19	31	19	32	193	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
United States Netherlands Denmark China	731, 629 64, 693 25, 954 10, 672	6,748 1,383	642, 486 39, 619 38, 102 8, 458	2,831 1,377	568, 708 60, 350 50, 613 8, 074	2,769 912 0	546, 202 37, 099. 53, 305 2 4, 756	2, 331 304 2 66	579, 132 25, 320 43, 005	1,739 181
HungaryCanadaIrish Free StateMadagascarAustralia ⁸	9,618 4,020 3,852	15 1, 462 699 2 413	9, 183 175 3, 210 1, 514	1,656 1,016 0	6, 636 4, 730 3, 262 1, 689 1, 044	0 48 824 0 101	4, 730 4, 073 4, 886 3, 093 2, 417 2, 924	1,040 467 1	3, 254 4, 404 2, 932 5, 846 2, 430 1, 621	1, 563 160 0 25
	853, 986	10, 722	743, 717	7, 086	705, 106	4, 654	658, 755	4, 224	667, 944	
PRINCIPAL IMPORT- ING COUNTRIES										
United Kingdom Germany Cuba Czechoslovakia	857 0 52	267, 191 216, 643 87, 352 66, 159	739 4 267 0 7	279, 444 177, 180 69, 035 52, 630	645 4 428 0 3	284, 505 183, 454 45, 178 45, 401	385 4 57 0	273, 027 237, 460 21, 818 41, 568	356 47 0	321, 852 163, 460 29, 564
Mexico	672 500	55, 972 33, 151 32, 856 30, 326	6 35 493 22	77, 390 22, 334 17, 414 26, 549	1, 970 304 139	47, 615 18, 493 4, 568 577	0 8 164 29	37, 833 11, 339 2, 830 1	12 0 193 29	36, 343 6, 669 8, 742 0
Peru Italy Finland	2, 205 6 820 54	16, 257 11, 692 7, 523 6, 758	1,947 0 256 0	14, 199 4, 966 5, 324 5, 277	1, 298 0 211 0	8, 980 2, 445 2, 793 3, 302	836 0 38 1	12, 249 2, 084 5, 769 3, 838	2,435 1 30 0	20, 681 0 6, 654 4, 916
Switzerland Dominican Republic Philippine Islands	0 0 0	6, 031 4, 883 4, 799	10 0 0	3,908 4,058 4,706	14 0 0	3,345 4,549 5,909	25 0 0	1,886 4,418 5,740	2 0 0	3, 098 4, 903
British Malaya Sweden Brazil Norway	1, 327 231	3, 832 2, 843 2, 312 1, 945	2, 560 986 0	2,399 1,602 654 1,177	3, 512 653 0	1,978 1,884 310 1,114	379 2, 553 44 1	1, 185 1, 329 329 487	2, 284 19, 302 8	1, 449 1, 291 108 536
Norway Yugoslavia Total		1, 501 859, 026	262 8, 405	201 770, 447	1,748 11,352	16 666, 416	2, 161 6, 682	665, 190	2,064 27,117	610, 266

Table 351.—Sheep and lambs: Number on farms and farm value per head in the United States, Jan. 1, 1900-1935

Year	Num- ber 1	Farm value per head Jan. 1	Year	Num-	Farm value per head Jan. 1	Year	Num- ber ¹	Farm value per head Jan. 1
1900 9	Thou-sands 61, 504 44, 573 46, 155 46, 667 45, 180 42, 439 40, 288 42, 454 44, 518 46, 557 48, 382 52, 448 47, 73 47, 349	Dollars 2.93 2.98 2.65 2.63 2.59 2.82 3.54 3.84 3.88 3.43 4.12 3.91	1912 1913 1914 1915 1916 1917 1918 1919 1920 1920 1921 1922 1922 1923 1924	Thou-sands 43, 279 40, 700 37, 773 36, 257 36, 543 36, 700 41, 000 55, 034 40, 643 39, 378 36, 821 36, 895 37, 020	Dollars 3. 46 3. 94 4. 02 4. 50 5. 17 7. 13 11. 82 11. 63 10. 45 6. 27 4. 79 7. 49 7. 88	1925 2	Thou-seards 55, 590 38, 392 40, 183 42, 302 45, 121 48, 249 56, 975 51, 233 52, 599 53, 155 51, 762 49, 766	9, 68 10. 48 9. 67 10. 22 10. 59 8. 94 5. 36 3. 40 2. 90 3. 79 4. 31

Figures for 1900-1919 are tentative revised estimates of the Bureau of Agricultural Economics.
 Italic figures are from the census. Census dates were June 1, 1900, Apr. 15, 1910, Jan. 1, 1920, and 1925, and Apr. 1, 1930.
 1900, 1910, and 1930 include spring-born lambs.
 Freliminary.

Preliminary.
 Does not include Manchuria after June 30, 1932.
 Year ended June 30.
 Includes oleomargarine.

Bureau of Agricultural Economics; official sources.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 352.—Sheep and lambs: Number on farms and farm value per head, by States, Jan. 1, 1932-35

		Nui	nber		F	arm valu	e per hea	đ 1
State and division	1932	1933	1934	1935 ²	1932	1933	1934	1935
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	Thou- sands 79 18 39 11 2 10 473	Thou-sands 70 16 36 11 2 10 454 7	Thou-sands 65 15 34 10 2 9 454	Thou- sands 55 14 32 10 2 8 459	Dollars 3, 50 4, 50 3, 90 4, 50 4, 50 4, 70 4, 40 5, 40	Dollars 3.00 3.70 3.50 3.60 4.00 4.30 3.60 3.60	Dollars 3.30 4.10 3.90 4.10 4.50 4.40 4.30	Dollars 3, 50 4, 40 4, 20 4, 50 4, 50 5, 10 4, 60 4, 90
	491	501	526	526	4.40	3.00	3.30	3.90
North Atlantic	1, 130	1, 107	1,122	1, 113	4.35	3.30	3.79	4, 23
Ohio	2, 129 840 749 1, 248 540	2, 079 785 736 1, 230 464	2, 140 773 698 1, 161 452	2, 162 805 773 1, 103 466	3. 50 4. 00 3. 80 3. 90 3. 20	2, 80 3, 30 3, 20 3, 10 2, 50	3.50 4.10 4.00 4.00 3.40	4. 20 5. 40 5. 10 4. 60 4. 20
East North Central	5, 506	5, 294	5, 224	5, 309	3. 67	2. 97	3.75	4. 59
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	1, 132 1, 428 1, 225 1, 100 1, 375 1, 036 777	1, 137 1, 238 1, 200 1, 046 1, 441 1, 057 682	1, 188 1, 331 1, 189 951 1, 524 997 692	1, 179 1, 504 1, 247 744 1, 290 740 722	3. 20 3. 30 3. 30 3. 30 3. 30 3. 00 3. 10	2. 80 2. 90 2. 70 2. 70 2. 90 2. 80 2. 70	3. 80 4. 30 3. 80 3. 70 3. 80 4. 20 3. 90	4. 20 4. 70 4. 40 3. 70 8. 90 4. 30 4. 20
West North Central	8, 073	7, 801	7,872	7, 426	3. 23	2. 78	3.94	4. 24
North Central	13, 579	13, 095	13, 096	12, 735	3, 41	2. 86	3.86	4. 38
Delaware Maryland. Virginia. West Virginia. North Carolina. South Carolina. Georgia. Florida.	4 108 495 631 91 14 36 43	4 108 480 631 92 14 86 44	3 109 470 600 88 15 36 43	3 109 442 552 88 15 36 42	5. 00 5. 10 4. 60 4. 40 3. 90 3. 60 2. 30 2. 40	3. 80 3. 80 3. 50 3. 30 3. 10 3. 10 2. 20 2. 30	4. 70 4. 50 4. 30 3. 70 3. 40 3. 10 2. 40 2. 40	4. 70 4. 60 4. 40 4. 00 3. 70 3. 10 2. 60 2. 60
South Atlantic	1,422	1,409	1, 364	1, 287	4. 35	3. 22	3.86	4.08
Kentucky. Tennessee. Alabama. Mississippi. Arkansas. Louisiana. Oklahoma. Texas	897 893 50 100 59 140 185 7, 212	906 405 52 100 61 143 188 7,644	951 389 47 95 58 137 183 8, 179	999 405 47 81 58 137 354 7,152	4. 70 4. 00 2. 60 2. 00 2. 60 2. 70 3. 00 2. 90	3. 90 3. 20 2. 00 1. 80 2. 00 2. 00 2. 70 2. 50	4. 50 4. 00 2. 30 2. 30 2. 20 2. 20 3. 20 2. 90	4. 90 4. 60 2. 90 2. 60 2. 60 2. 70 3. 40 3. 40
South Central	9, 036	9, 499	10, 039	9, 233	3. 12	2. 61	3.09	3. 62
Montana idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	3, 820 2, 274 3, 972 3, 391 3, 002 1, 090 2, 755 1, 200 706 2, 580 3, 198	4, 087 2, 264 3, 893 3, 093 2, 820 1, 003 2, 360 1, 019 720 2, 355 3, 038	4, 220 2, 461 3, 873 3, 028 2, 757 961 2, 242 979 724 2, 460 2, 886	3, 755 2, 335 3, 579 2, 736 2, 460 942 2, 168 913 752 2, 497 3, 261	3. 20 3. 60 3. 60 3. 10 2. 30 2. 40 3. 70 4. 00 4. 00 4. 20	3. 00 3. 20 3. 20 2. 90 2. 30 2. 30 3. 00 3. 30 3. 30 2. 90 3. 30	4. 10 4. 10 4. 20 3. 20 3. 40 4. 60 4. 50 3. 90 4. 20	4. 60 4. 70 4. 60 4. 50 3. 80 4. 40 4. 70 5. 00 5. 00
Western	27, 988	26,652	26, 591	25, 398	3, 40	2, 99	4, 01	4. 54
United States	53, 155	51,762	52, 212	49, 766	3.40	2.90	3.79	4. 3

Sum of total value of classes divided by total number and rounded to nearest dime for States. Division and United States averages not rounded.
 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 353.—Sheep: Number in countries having 100,000 and over, averages 1921-25 and 1926-30, annual 1930-33

1921-	-25 and 1926-	so, ann	ıuai 19	30-33			
	_	Ave	rage				
Country	Date or month of estimate	1921-	1926-	1930	1931	1932	1933
	or estimate	25 1	30 1				
NORTH AMERICA AND WEST		Thou-	Thou-	Thou-	Thou-	Thou-	Thou-
INDIES	T	sands	sands	sands	sands	8and8	8and8 51 769
United States Canada Mexico	January 1	37, 662 3, 027 2 1, 362	45, 448 3, 431	51, 383 3, 696 3 3, 674	52, 599 3, 608	53, 155 3, 644	51, 762 3, 386
Mexico.	do	2 1, 362	3, 431 3, 186	3 3, 674			
Guatemala		153 (75)	196 102	184 4 102	147	166	
Deminison Papublic		148	162	- 102			
Estimated total 5		42,700	52, 800				
SOUTH AMERICA							
G-lambia		776	794	810	900		
Venezuela		113		1			-
Ecuador		(1,000)	1,100	4 6 1, 500 3 4 11,209			
Peru	January 17	3, 436	4, 742	5, 020	5, 232		
Colombia Venezuela Ecuador Peru Bolivia Chile		11, 363 3, 436 4, 332 8 7, 933	3 6, 263	5, 020 3 6, 263	10, 702	³ 6, 083 10, 661	
Brazil	September	8 7, 933	(10, 702)	3 20, 558	(18, 000)	15, 406	
Uruguay	January 17	3 14, 443 (600)	1, 100 3 11, 209 4, 742 3 6, 263 (10, 702) 19, 958 (600)	20,000			
Argentina	do	3 36, 209	- 44,410		609	616	
Bolivia Chile Brazil Uruguay Paraguay Argentina Falkland Islands Estimated total ¹		649	100, 500	607		010	
Estimated total 5		80, 900	100, 500				
EUROPE	Ì		628	690	691		
England and Wales	Junedododododo	14, 385	16, 548	16, 316	17 740	18, 495	18, 090
Scotland.	do	6, 827	7, 505	7,650	7,831	7, 916 792	7, 811 750
Northern Ireland	do	456	622 3, 255	704 3, 515	794 3, 575	3 461	3, 405
Irish Free State	do	2,804 1,380	1, 596	1,588	1,692	1,736	3, 405 1, 764
Sweden	July	1,384	680	653	635	608	575 179
Denmark	. do	380 3 668	213 3 485	193 3 485			110
EUROPE Iceland England and Wales Scotland Northern Ireland Irish Free State Norway 16 Sweden Denmark Netherlands Beigium France Spain Portugal Italy	JulydododododoJulydododododododo	126	6 122	1			
France	do	9,777	10.574	10, 452	10, 152 (19, 590)	9, 845 20, 047	9,762
Spain	do	9,777 19,229 3,721	19, 989	164,000	(19, 590)		
Fortugal Italy Switzerland Germany Austria Czechoslovakia Hungary Yugoslavia Greece Bulgaria Rumania Poland Lithuania Latvia Estonia	do	12,014	4, 450 11, 310 170	10, 452 (19, 140) 464, 000 310, 269	185		
Switzerland	April	245	170			3, 499	3, 405
Germany	January 17	5, 889 526	3, 953 3 272	3, 480 3 272	0,001	.	
Austria	do	3 8 986	848			531	465
Hungary	April	1, 661 7, 683	1,604	1, 464 7, 736 5, 806 47, 986 12, 406	1, 440 7, 953 6, 799	1, 210	1, 058 8, 510
Yugoslavia	January 1	5, 965	7, 807 6, 551 8, 384	5, 806	6,799	8, 426 7, 072	8, 510 6, 927
Rulgaria	do	8, 186 11, 660 2, 193 1, 314	8, 384	4 7, 986		12, 356	19 202
Rumania	do	11,660	12, 936	12, 406	12, 230	2, 488	12, 293 2, 557 1, 322
Poland	November	1, 314	12, 936 2, 244 1, 335 1, 030	1,097	2, 599 1, 212 923	2, 488 1, 317	1,322
Latvia	June	1, 240	1 1,000	873	923 479	984 514	1, 114 541
Estonia	November June 30 July Southernbor	654 1,520			920	965	l
Finland Union of Soviet Socialist Republics 11	September		1, 196 122, 780	99,000		47, 400	45,700
publics 11			_	_		-	-
Estimated total exclud- ing Union of Soviet Socialist Republics [§]		_ 123, 600	127, 100)		-	-
ing Union of Soviet Socialist	; [1	1	1		
republics .	1		_	_	=	-	
AFRICA Ethiopia. Morocco. Algeria. Libia (Italian). Tunis. French West Africa.		_ (2,000) 4,000	4,000	6, 613	7 KEO	-
Morocco.		_ 1 7.533	8, 364 6, 176	7,976	4, 671	7, 556 5, 269	5, 262
Algeria	September	1,043	(1 13.5	11 682	1		
Tunis	January 17	1,794 3,745 2,176	2,05	5 2,461	2,976	2,475 5,470	2,931
French West Africa		3,742	4, 56 2, 57	6 3,000) 3, 100	5, 470 3, 100	
			5 4 0.	2 084	. 1 684	. 1 684	:
Gold Coast Nigeria, including British Cameroons	1		3,00	4 2,478	1		1
Cameroons	September	1,01	3 1, 13	8 1.12	1, 239	1,344 2,250 2,500	1,345
Angio-Egyption Suden	September	1, 63	2, 16	() 2,20	1, 239 2, 250 2, 500	2,250	
British Somaliland		. (2,00	0) 1,80		7 1	2,000	
Italian Somaliland	March 31	1, 66		6 1,23	2		
Eritres (Italian) 12 Kanya	March-June	_ 2,60	0 2,90	8 3,222	5 8,24	320	
French Cameroon	January 17				A 1 792	2 908	844
Uganda	January 1 7	(70	ດາໄ 84	5 1,00	1,02	1,030)
Cameroons Egypt Anglo-Egyptian Sudan British Somailland Italian Somailland Eritrea (Italian) 13 Kenya French Cameroon Uganda French Equatorial Africa Belgian Congo		30	4 28	2 27	2 : 24	£ (35)	G '
7 . 2 . 3 . 3 . 3	_						

See footnotes at end of table.

Table 353.—Sheep: Number in countries having 100,000 and over, averages 1921-25 and 1926-30, annual 1930-33-Continued

		,		,	,		
	Date or month	Ave	rage				
Country	of estimate	1921- 25 1	1926- 30 ¹	1930	1931	1932	1933
AFEICA—continued Ruanda British Southwest Africa Beehuanaland Union of South Africa Basutoland Rhodesia, Southern Tanganyika Territory Madagascar Estimated total 5	January 1 7do.7dodo	1, 954 333 (1, 600) 110	Thou- sands 289 1, 249 159 43, 129 2, 146 349 2, 032 158 93, 600	Thou- sands 258 1, 311 179 48, 520 2, 233 354 2, 262 165	Thou-sands 290 1, 397 180 180 13 51, 000 2, 829 360 2, 233 207	Thou- sands 315 1,524 181 13 48, 200 1,949 376 2,281 189	Thou-sands 994 200 13 43, 700 1, 885 376
Arabia Cyprus Turkey, European and Asiatic. Iraq (Mesopotamia) ¹² Palestine Transjordan Iran (Persia) Syria and Lebanon India: British Native States China, including Turkestan, Manchuria, Inner Mongolia. Philippines. Netherlands Indies: Java and Madura Outer possessions. Estimated total, excluding Union of Soviet Socialist Republics ⁴	February March January-April January 1 ' January 1 '	10, 458 5, 270 271 (236) 16, 562 1, 797 22, 412 12, 299 14(30,000) 115 915 115	6 3, 500 11, 853 5, 534 249 249 2, 035 23, 733 13, 578 15 26, 000 125 1, 292 114, 100	\$ 3,500 290 10,498 5,349 253 253 2416,000 2,682 \$ 25,540 \$ 19,089	306 11, 762 5, 464 306 292 2, 969 25, 295 18, 295	24, 307 248 261 2, 080 25, 286	15 26, 000 1, 588
Australia		23, 382	103, 329 27, 516 130, 900 551, 106 451, 258 742, 200	104, 558 30, 841 	110, 568 29, 793 	110, 619 28, 692 	112, 915 27, 756

¹ Average for 5-year period if available; otherwise, for any year or years within this period except a otherwise stated.
Incomplete.

3 Census figures.

4 Year 1929 or nearest year.
5 These totals include countries with less than 100,000; interpolations for a few countries not reporting each year, and rough estimates for some others.

Unofficial.

9 June 1930.

19 In rural communities only.
11 Years 1921–28 from Livestock Industry in the Soviet Union. Later figures from Prayda, Jan. 28, 1934, and Socialist Agriculture, Nov. 27, 1934. Sheep numbers for 1929–33 estimated from total number of sheep and goats.

18 Estimate based on change in sheep numbers in June compared with preceding June.
 14 Estimate based on increases in 1920 in 20 Provinces which supported 80 percent of total number in China

in 1914

in 1914.

18 Estimate based on official estimate for 1932 or 1933 published in the Chinese Economic Bulletin for 22 Provinces which supported 77 percent of total in 1914. The official estimate excluding Turkistan and Inner Mongolia for 1932 or 1933 was 19,995,000. Estimates for this territory and for Manchuria included with China in this table.

10 Comparable totals for numbers of countries indicated.
11 Comparable totals for numbers of countries were as follows in millions of head: 1909-13, North America, Central America, and West Indies, 49.6; South America, 93.2; Europe (excluding Union of Soviet Socialist Republics), 134.4; Africa, 71.2; Asia (excluding Union of Soviet Socialist Republics), 115.3; Oceania, 114.7; estimated world total, including Union of Soviet Socialist Republics, 691.6.

Bureau of Agricultural Economics; compiled from official sources and the International Institute of Agriculture unless otherwise stated. Figures in parentheses are interpolated. See wool issue of Foreign Crops and Markets usually published in May, and World Wool Prospects published monthly by the Bureau, for later figures.

⁷ Estimates for countries reporting as of Dec. 31 have been considered as of Jan. 1 of following year; i. e., figures for numbers of sheep in France as of Dec. 31, 1929, have been placed in 1930 column, etc. 8 Census 1920.

Table 354.—Sheep: Receipts at principal public stockyards and at public stockuards, 1925-34

Year	Chi- cago	Den- ver	East St. Louis	Fort Worth	Kansas City	Omaha	South St. Joseph	South St. Paul	Sioux City	Total nine mar- kets ¹	All other stock- yards report- ing	Total all stock- yards report- ing 1
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 ²	Thou-sands 3, 969 4, 405 3, 829 3, 868 3, 785 4, 489 3, 922 3, 536 3, 003	Thou-sands 2, 357 1, 826 1, 908 2, 295 2, 290 2, 062 2, 499 2, 334 2, 302 3, 109	Thou- sands 559 636 574 510 534 584 661 711 659 650	Thou-sands 314 445 445 458 540 432 1, 173 1, 198 779 597	Thou-sands 1, 500 1, 762 1, 616 1, 767 1, 753 2, 016 2, 244 1, 837 1, 672 1, 738	Thou-sands 2, 420 2, 780 2, 604 3, 037 3, 031 3, 410 3, 510 2, 388 2, 125 1, 968	Thou-sands 1, 143 1, 303 1, 348 1, 580 1, 636 1, 634 1, 572 1, 291 1, 233 1, 144	Thou- sands 545 773 705 891 1, 139 1, 354 1, 690 1, 522 1, 552 1, 584	Thou- sands 360 449 527 568 840 1, 188 1, 279 776 857 1, 167	Thou- sands 13, 166 14, 378 13, 555 14, 974 15, 548 17, 015 19, 118 16, 479 15, 316 14, 958	Thou-sands 8, 934 9, 490 10, 384 10, 623 11, 320 12, 793 13, 905 12, 827 11, 868 11, 180	Thou-sands 22, 100 23, 868 23, 939 25, 597 26, 868 29, 808 33, 023 29, 306 27, 184 26, 138

¹ Rounded totals of complete figures.

1928....

1929 ...

1930

1931___

1932____

1933....

1934 1

116

188

126

184

124

108

101

115

101

105

80

82

Receipts 1900-24 are available in 1924 Yearbook, table 540.

Table 355.—Sheep: Receipts and stocker and feeder shipments at United States public stockyards, 1925-34

RECEIPTS Nov. Jan. Feb. Mar. Mav June July Aug. Sept. Oct. Dec. Total Year Apr. Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thou-Thonsands sands sands sands sands sands sands sands sands sands sands sands. sands 2, 627 3, 279 2, 848 3, 386 1,689 1,717 1925_ 1, 467 1, 548 388 1.504 1, 541 1,603 1,913 1,699 2, 064 2, 277 2, 209 2, 362 2, 545 2, 583 3, 270 2, 919 2, 795 2, 622 3, 198 3, 090 1,712 1,917 1,896 2,053 2,168 2,607 2,811 2,203 2,064 1,833 1,608 22, 100 23, 868 1, 1, 694 1, 502 1, 739 1926____ 1,706 486 1 2, 013 1, 952 2, 173 2, 334 2, 810 2, 429 2, 403 2, 114 1, 676 3, 587 23, 939 1, 558 1, 486 1,816 1,609 1927.... 501 1,740 1, 480 1, 591 2, 012 2, 230 2, 713 2, 412 2, 097 1, 838 3,938 1,610 25, 597 1928.... 1,705 669 1, 520 1,913 1,898 1, 705 1, 877 1, 903 2, 175 2, 363 1, 914 1, 752 2, 230 2, 587 2, 428 2, 091 1, 810 1, 703 2, 307 2, 182 1, 657 1, 774 1, 542 2, 119 2, 296 2, 535 4, 093 3, 784 3, 956 1929.... 544 1, 527 3, 355 26,868 3, 580 3, 580 3, 900 3, 239 2, 911 3, 324 2, 151 2, 120 2, 115 29, 808 33, 023 29, 306 27, 184 1, 803 1930___. 1931___ 1,964 2,035 2, 535 2, 240 2, 228 2, 152 1932___ 3, 266 3, 268 1933. 1, 795 1, 844 1934 1 ... 1,570 4, 057 26, 138 1,820 1, 456 STOCKER AND FEEDER SHIPMENTS 1, 392 421 210 1925 . . . 137 857 475 4, 67 4, 89 5, 01 5, 56 1926.... $\frac{223}{174}$ 156 107 83 124 130 287 260 567 1,093 150 493 1927____ 207 118 259 257 215 389 943 560 497 136 140

205

218

142

176

100

130

155

133

210

134

189

143

107

135

95

122

99

103

77

67

278

226

216

289

172

100

115

234

231

206

243

181

108

190

564

639

465

718

460

347

397

080

907 1,024

262

535

498

774

1,027

466 831

181

803

857

909

544 575

761

655

501

461

283

193

183

282

182

196

143

133

4, 46 5, 28

5, 28 3, 37 3, 00 3, 36

² Includes sheep purchased for Federal Surplus Relief Corporation from Sept. 14 to Dec. 15.

Bureau of Agricultural Economics; compiled from data of the livestock and meat-reporting service of the

¹ Includes sheep purchased for Federal Surplus Relief Corporation from Sept. 14 to Dec. 15.

Bureau of Agricultural Economics. Compiled from data of livestock and meat-reporting service of the Bureau Earlier data in 1930 Yearbook, table 399.

Table 356.—Farm prices of sheep, per head, by ages, United States, Jan. 1, 1925-35

Year	Under 1 year old	Ewes 1 year and over	Weth- ers 1 year and over	Rams	Year	Under 1 year old	Ewes 1 year and over	Wethers 1 year and over	Rams
1925	Dollars 8. 53 9. 04 7. 91 8. 45 8. 93 7. 85	Dollars 10. 02 11. 01 10. 32 10. 86 11. 19 9. 10	Dollars 7. 13 7. 32 6. 60 7. 23 7. 64 6. 44	Dollars 16. 91 18. 45 18. 73 19. 63 20. 27 19. 61	1931 1932 1933 1934 1935	Dollars 4. 64 2. 87 2. 66 3. 49 3. 71	Dollars 5. 42 3. 47 2. 88 3. 75 4. 40	Dollars 3, 43 2, 38 1, 79 2, 27 2, 68	Dollars 12, 91 8, 20 6, 87 9, 16 9, 53

Bureau of Agricultural Economics. Based on returns from special price reporters. Average price, by States, weighted by estimated numbers each age group.

Table 357.—Sheep: Average price per 100 pounds received by producers, United States, 1925-34

Year	Jan. 15	Feb.	Mar.	Apr. 15	May 15	June 15	July 15	Aug.	Sept.	Oct. 15	Nov. 15	Dec.	Weighted average
1925	Dol. 7. 86 7. 95 6. 87 7. 52 7. 84 6. 91 4. 04 2. 48 2. 10 2. 71	Dol. 8.41 8.20 7.16 7.60 7.98 6.84 4.15 2.67 2.16 3.46	Dol. 8. 20 7. 66 7. 41 7. 85 8. 36 6. 59 4. 24 2. 91 2. 18 3. 66	Dol. 8. 42 7. 67 7. 40 8. 11 8. 40 6. 44 4. 24 2. 86 2. 29 3. 63	Dol. 7.53 7.78 7.68 8.09 8.09 5.86 3.91 2.52 2.47 3.54	Dol. 7. 04 7. 56 7. 27 7. 84 7. 86 5. 52 3. 28 2. 36 2. 46 2. 98	Dol. 7. 17 7. 09 7. 16 7. 56 7. 25 4. 65 3. 01 2. 37 2. 59 2. 73	Dol. 7. 32 6. 92 7. 13 7. 53 7. 32 4. 13 3. 00 2. 19 2. 57 2. 59	Dol. 7. 27 7. 13 7. 06 7. 58 7. 01 4. 21 2. 80 2. 17 2. 52 2. 45	Dol. 7. 31 6. 93 7. 05 7. 50 6. 83 3. 93 2. 63 2. 03 2. 46 2. 52	Dol. 7. 51 6. 75 7. 42 7. 50 6. 75 3. 98 2. 63 2. 06 2. 38 2. 55	Dol. 7. 79 6. 95 7. 38 7. 29 6. 61 3. 96 2. 52 2. 04 2. 48 2. 66	Dol. 7, 70 7, 43 7, 26 7, 68 7, 55 5, 36 3, 43 2, 40 2, 37 2, 98

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of sheep Jan. 1, to obtain a price for the United States; yearly price obtained by weighting monthly prices by Federal inspected slaughter. Data for earlier years in 1928 Yearbook, table 407. Only monthly prices are comparable.

Table 358.—Lambs: Average price per 100 pounds received by producers, United States, 1925-26 to 1934-35

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Weighted
	15	15	15	15	15	15	15	15	13	15	15	15	average
1925-26 1928-27 1927-28 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34 1934-35	Dol. 11. 62 12. 07 11. 95 13. 18 12. 31 9. 02 6. 42 4. 49 5. 18 6. 37	11. 52 11. 44 12. 25 11. 90 8. 08 5. 60 4. 37 5. 24	11. 15 11. 88 11. 46 6. 82 5. 33 4. 11	11. 32 11. 14 11. 97 11. 08 6. 67 5, 04 4. 11 5. 08	11. 31 11. 22 11. 57 10. 97 6. 15 4. 64 3. 95 5. 01	11. 11 11. 42 11. 50 10. 74 6. 21 4. 46	10. 92 11. 39 11. 41 10. 76 6. 18 4. 19 3. 95	10. 65 11. 34 12. 23 11. 10 6. 30 4. 43 4. 09 5. 50	11. 90 12. 60 10. 46 6. 59 4. 58 4. 19	11. 55 12. 31 13. 12 9. 63 6. 84 5. 05 4. 27	11. 97 12. 73 13. 36 9. 02 6. 94 5. 13 4. 34	11, 92 13, 03 12, 79 8, 92 6, 96 4, 78 4, 72	11. 36 11. 76 12. 31 10. 71 6. 92 4. 97 4. 21

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of lambs Jan. 1, to obtain a price for the United States; yearly price obtained by weighting monthly prices by receipts at principal markets. Data for earlier years in 1928 Yearbook table 408. Only monthly prices are comparable.

Table 359.—Sheep and lambs: Average price per 100 pounds at Chicago, by months, 1925-34

SHEEP

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver-
1925 1926 1927 1928 1929 1931 1932 1933 1934	Dol. 10. 33 9. 72 6. 94 7. 03 9. 32 6. 50 3. 97 2. 62 2. 30 3. 42	Dol. 9. 69 9. 18 8. 03 8. 96 8. 78 5. 53 4. 25 3. 25 2. 34 4. 41	Dol. 9. 22 8. 82 8. 88 9. 47 9. 72 5. 59 4. 54 3. 75 2. 48 5. 06	Dol. 7. 84 8. 87 9. 62 10. 34 5. 66 3. 90 3. 06 2. 38 5. 06	Dol. 7. 96 7. 97 7. 44 8. 53 6. 78 5. 31 2. 78 1. 41 2. 51 2. 65	Dol. 6. 25 5. 85 5. 88 6. 12 6. 28 3. 38 1. 62 1. 65 2. 34 1. 59	Dol. 7. 48 5. 97 6. 25 6. 28 5. 85 3. 12 2. 50 1. 66 2. 09 1. 88	Dol. 6. 83 6. 50 6. 47 6. 72 5. 34 3. 53 2. 03 1. 92 2. 25 2. 34	Dol. 6. 95 6. 25 6. 14 6. 34 4. 56 3. 50 1. 58 1. 62 2. 14 2. 17	Dol. 7. 64 6. 12 6. 00 6. 18 4. 70 3. 10 1. 94 1. 59 2. 03 1. 90	Dol. 8. 16 5. 88 6. 40 5. 84 5. 38 3. 34 2. 16 1. 82 2. 18 2. 09	Dol. 9. 57 5. 86 6. 41 7. 03 5. 41 3. 22 2. 18 2. 08 2. 55 2. 84	Dol. 8. 16 7. 25 7. 04 7. 39 6. 87 4. 32 2. 79 2. 20 2. 30 2. 95
						LAM	BS						

¹ Simple average of monthly prices.

Data for 1901-24 are available in 1932 Yearbook, table 356.

Table 360.—Sheep and lambs: Annual slaughter under Federal inspection, 1907—34, estimated equivalent of Federal inspection, 1900–1906, and estimated total slaughter (including farm) in United States, 1900–1934 ¹

Year	Federally inspected		Year	Federally inspected	Total 2	Year	Federally inspected	Total 2
1900	Thou-sands 8,940 9,996 10,519 10,046 10,026 10,385 10,305 11,343 11,408 14,020	Thou-sands 12, 015 12, 358 13, 038 13, 628 13, 823 13, 371 13, 360 14, 725 14, 797 18, 057	1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923	Thou- sands 14, 979 14, 406 14, 229 12, 212 11, 941 9, 345 10, 320 12, 691 10, 982 13, 005 10, 929 11, 529	Thou-sands 19, 247 18, 520 18, 290 15, 756 15, 408 12, 149 13, 359 16, 317 14, 180 16, 710 14, 112 14, 862	1924 1925 1926 1927 1928 1929 1930 1931 1931 1932 1933 1934	Thou- sands 11, 991 12, 961 12, 883 13, 488 14, 023 16, 697 18, 071 17, 899 17, 354 17, 412	Thou-sands 15, 441 15, 454 16, 689 16, 589 17, 348 18, 048 21, 132 22, 038 22, 945

¹ Federal Meat Inspection Act, effective Oct. 1, 1906.

Bureau of Agricultural Economics. Bulk of sales prices from data of the livestock and meat reporting service of the Bureau.

² Subject to revision.

Bureau of Animal Industry and Bureau of Agricultural Economics. Data for years 1880-99 last printed in 1933 Yearbook, table 349.

Table 361.—Sheep and lambs: Shipments, slaughter, value of production, and income by States, 1933

		Ug S	iuuca, 1	000				
	Ship	oments and	i local sla	ughter	Inshipm	ents, sto	cker, fee	ding, and
State and division	St	теер	La	ambs	She	eep	La	mbs
	Head	Total weight	Head	Total weight	Head	Total weight	Head	Total weight
Maine New Hampshire Vermont	Thou-sands 8 2 6 1	1,000 pounds 800 200 600 110	Thou- sands 14 5 8 3 1	1,000 pounds 840 300 480 195 65 130	Thou-sands	1,000 pounds	Thou- sands	1,000 pounds
Connecticut New York New Jersey	54	6, 318	198	13, 879 75	2	200	36	2, 160
Pennsylvania	21	2, 205	214	14, 980	1	100	2	120
North Atlantic	94	10, 453	446	30, 944	3	300	38	2, 280
Ohio	129 54 90 110 47	14, 835 6, 480 10, 800 13, 200 5, 170	947 636 706 686 362	66, 290 54, 060 60, 010 58, 310 28, 960	1 5 24 5 2	100 500 2, 400 500 220	41 169 300 108 163	2, 665 10, 985 21, 000 7, 344 11, 410
East North Central	430	50, 485	3, 337	267, 630	37	3, 720	781	53, 404
Minnesota	77 97 101 92 135 58 26	8, 540 11, 640 11, 110 10, 120 14, 850 6, 655 2, 860	913 1,066 918 614 606 1,466 722	75, 761 85, 280 68, 850 46, 050 45, 450 128, 968 64, 960	13 27 11 5 27 11	1, 300 2, 700 1, 155 550 2, 430 1, 100	381 500 225 67 50 1, 300 420	22, 860 32, 500 14, 625 4, 355 3, 750 78, 000 27, 300
West North Central	586	65, 775	6, 305	515, 319	94	9, 235	2, 943	183, 390
North Central	1,016	116, 260	9, 642	782, 949	131	12, 955	3, 724	236, 794
Delaware Maryland Virginia. West Virginia North Carolina South Carolina Georgia Florida	4 10 41 5	440 1, 200 4, 510 425	3 74 380 419 44 6 7	195 5, 920 30, 400 33, 520 2, 420 270 350 200	1 1	110 90	1 3 1	65 240 80
South Atlantic	64	6, 915	937	73, 275	2	200	5	385
Kentucky. Tennessee Alabama Mississippi. Arkansas Louislana. Oklahoma Texas	1 53 7 13 8 11 26 347	120 5,830 560 1,040 840 1,023 2,730 32,965	810 257 3 12 19 34 100 1,707	60, 750 19, 275 150 600 1, 140 1, 700 6, 500 102, 570	3 2	300 220 3,000	48 	3, 360 700 2, 700
South Central	466	45, 108	2, 942	192, 685	35	3, 520	107	6, 760
Montana Idaho Wyoming Colorado New Mexco Arizona Utah Nevada Washington	199 175 259 182 108 35 203 47 45	21, 890 20, 125 26, 686 19, 110 10, 800 3, 745 21, 721 4, 900 4, 950	1, 344 1, 633 920 2, 137 507 230 675 242 366	100, 800 130, 640 59, 820 170, 960 32, 955 17, 250 47, 250 15, 730 29, 280	49 10 321 20 30	4, 900 1, 000 33, 705 2, 000 3, 000	646 74 1, 149 5	41, 990 4, 810 68, 940 350 5, 040
Oregon	122 193	13, 054 19, 300	858 1,631	65, 208 122, 675	6	3,600	20 4 200	1, 400 304 12, 000
Western	1,568	166, 281	10, 543	792, 568	477	48, 910	2, 175	135, 159
44 OD/OT TO								,

Table 361.—Sheep and lambs: Shipments, slaughter, value of production, and income by States, 1933—Continued

	oy .	States, 1	933(Jontinued				
		Farm s	laughter		Value of	Re-		•
State and division	Sh	ieep	L	ambs	amount con- sumed	ceipts from sales	Gross income	Value of produc- tion
	Head	Total weight	Head	Total weight	on farms	50163		
Maine	Thou- sands 2	1,000 pounds 200	Thou- sands 9	1,000 pounds 540	1,000 dollars 9	1,000 dollars 100	1,000 dollars 109	1,000 dollars 91
New Hampshire Vermont Massachusetts			1 2 1	60 120 65	1 1 1	26 42 18	27 43 19	27 39 18
Rhode Island Connecticut New York	10	1, 170	1 15	65 1, 065	1 8	19 827	20 835	4 15 863
New Jersey Pennsylvania		770	10	75 700	8	917	925	992
North Atlantic	19	2, 140	40	2, 690	30	1, 961	1, 991	2, 057
Ohio	2 3 1 3	480 250 360 120 375	10 2 9 8 7	800 160 765 600 630	35 11 41 12 29	3, 660 2, 463 1, 994 2, 861 772	3, 695 2, 474 2, 035 2, 873 801	3, 776 2, 396 1, 904 2, 770 1, 009
East North Central	13	1, 585	36	2, 955	128	11, 750	11,878	11, 855
Minnesota	6 4 2 6 4 3 3	744 500 240 720 440 345 360	7 8 4 9 6 5	567 640 300 720 450 375 380	35 41 17 44 30 26 22	2, 650 2, 548 3, 152 2, 080 2, 311 1, 987 1, 319	2, 685 2, 589 3, 169 2, 124 2, 341 1, 963 1, 341	3, 121 3, 146 3, 310 1, 830 2, 144 2, 458 1, 788
West North Central	28	3, 349	44	3, 432	215	15, 997	16, 212	17, 797
North Central	41	4, 934	80	6, 387	343	27, 747	28, 090	29, 652
Delaware. Maryland. Virginia. West Virginia. North Carolina. South Carolina. Georgia. Florida.	2	1, 320 330 90 170	1 2 13 5 9 1 2	65 160 1,040 400 495 45 100 50	1 49 17 14 1 6	16 384 1,757 1,920 150 15 22 21	17 388 1,806 1,937 164 16 28 22	13 391 1,772 1,996 158 19 27 20
South Atlantic	17	1, 910	34	2, 355	93	4, 285	4, 378	4, 396
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	3 4 1 1 2 1 10	80 105 186 110 900	4 6 3 3 2 4 2 25	300 450 150 150 120 200 130 1,750	17 24 3 5 4 8 7	3, 654 1, 289 26 64 74 110 349 4, 528	3, 671 1, 313 29 69 78 118 356 4, 605	3, 825 1, 252 18 56 70 101 283 6, 118
South Central	22	2, 181	49	3, 250	145	10, 094	10, 239	11, 723
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	72 30 7 6	960 1, 150 1, 100 1, 050 6, 000 7, 704 3, 210 700 720 1, 100 2, 500	14 20 20 16 25 48 20 8 10 17	1, 050 1, 600 1, 400 1, 280 1, 625 3, 600 1, 500 520 800 1, 292 2, 310	54 90 81 75 180 342 129 42 22 60 124	5, 469 4, 263 8, 303 2, 640 1, 671 1, 012 2, 435 958 1, 454 3, 513 5, 695	5, 523 4, 353 3, 384 2, 715 1, 851 1, 354 2, 564 1, 000 1, 476 3, 573 5, 819	5, 691 5, 225 2, 830 4, 456 1, 807 1, 391 2, 344 910 1, 505 3, 712 5, 671
Western	248	26, 194	228	16, 977	1, 199	32, 413	33, 612	35, 542
United States	347	37, 359	431	31, 659	1,810	76, 500	78, 310	83, 370

Bureau of Agricultural Economics; preliminary estimates of Division of Crop and Livestock Estimates. The figures on income as shown in tables 461 and 462 are computed from the data shown in this table. The difference between value of production and income arises from the fact that in computing value of production, allowance is made for changes in inventory numbers between the beginning and end of the year, while in computing income these changes are not used.

Table 362.—Mutton and lamb: International trade, average 1925-29, annual 1930-33

	Average	1925-29	19	30	19	31	19	32	193	3 1
Country	Exports	Im- ports	Exports	Im- ports	Exports	Im- ports	Exports	Im- ports	Exports	Im- ports
PRINCIPAL EXFORT- ING COUNTRIES New Zeland Argentina Australia 2 Uruguay Netheriands Brazil Irish Free State Estonia Poland Total	1,000 pounds 301,079 176,547 72,153 41,048 14,942 1,758 1,370 557 120	1,000 pounds 0 0 17 0 1,049 0 344 0 9	1,000 pounds 381, 914 177, 693 100, 411 62, 304 11, 342 7, 402 2, 003 681 1, 112 744, 862	1,000 pounds 0 0 0 0 550 0 259 0 0	1,000 pounds 387, 861 184, 106 109, 253 40, 312 11, 015 3, 736 2, 780 768 2, 629	1,000 pounds 0 0 0 0 598 0 255 0 0	1,000 pounds 431, 292 156, 494 165, 281 13, 484 8, 698 3, 040 827 1, 365 781, 282	1,000 pounds 0 0 0 0 349 0 181 0 0	1,000 pounds 427,535 138, 116 166, 798 6, 690 1, 271 4, 979 828 1, 145 747, 362	1,000 pounds 0 0 0 392 0 0
PRINCIPAL IMPORT- ING COUNTRIES United Kingdom France. Germany United States. Norway Belgium Canada Denmark Sweden	0 213 637 1,087 0 702 1,501 9	329, 309 22, 035 7, 868 7, 255 4, 581 3, 763 2, 335 2, 152 1, 058	0 143 2,457 1,251 0 1,724 242 6 25	730, 271 27, 679 9, 679 8, 181 4, 904 4, 391 4, 412 2, 638 1, 515	0 448 1,480 550 0 592 333 5 7	813, 107 38, 116 342 5, 503 3, 580 4, 756 1, 294 2, 552 1, 837	0 384 94 259 0 105 348 5	793, 389 18, 892 442 5, 009 3, 311 6, 472 702 452 1, 330	0 205 10 321 0 62 406 19	768, 543 19, 895 347 6, 215 1, 480 4, 290 297 341 1, 432
Total	4, 185	680, 356	5, 848	793, 670	3, 415	871, 087	1, 196	829, 999	1,024	802, 840

¹ Preliminary.

Bureau of Agricultural Economics; official sources.

Table 363.—Wool: Production, exports, imports, and amount available for consumption, of combing and clothing wool, and imports of carpet wool, United States, 1910-34

			Combing a	nd clothing			O
Calendar year		Production		Total ex-	Imports, less reex-	Available for con-	Carpet, im- ports, less reexports
	Shorn	Pulled	Total	domestic 1	ports 1	sumption 2	reexports
1910	1,000 lb. 281, 363 277, 548 262, 543 252, 675 247, 192 245, 726 244, 890 241, 892 256, 870 249, 958 250, 617 241, 455 228, 109 229, 895 227, 131 252, 832 288, 900 314, 588	1,000 lb. 40,000 41,000 41,500 43,500 43,500 40,000 43,600 42,000 48,300 42,900 42,500 43,500 42,500 50,100 51,900	1,000 lb. 321, 363 318, 548 304, 043 296, 175 290, 192 285, 726 288, 490 281, 892 298, 870 298, 258 293, 517 289, 965 270, 280, 931 280, 931 381, 500 340, 009 366, 488 382, 066	1,000 lb. 3 48 (4) 3 77 3 335 3 8, 158 3, 919 1, 827 407 2, 840 8, 1927 453 309 273 2992 323 485 239	1,000 lb. 94, 374 50, 928 111, 653 61, 306 165, 882 307, 354 341, 864 377, 882 336, 774 207, 149 217, 233 189, 486 170, 142 109, 850 87, 132 100, 352	1,000 lb. 415, 689 309, 470 415, 696 357, 404 415, 730 584, 922 648, 926 621, 929 676, 129 676, 129 492, 091 505, 271 459, 142 515, 130 375, 117 471, 339 488, 350 449, 536	1,000 lb. 76,705 101,484 124,649 86,410 88,427 93,175 76,167 73,002 66,202 96,873 35,093 97,823 172,822 121,518 140,684 157,575 115,232 143,871 148,794 174,485
1930	350, 311 372, 228 345, 350 364, 721 357, 658	61, 900 66, 100 67, 100 64, 200 60, 500	412, 211 438, 328 412, 450 428, 921 418, 158	162 274 179 19	68, 000 36, 772 12, 020 43, 554 5 23, 156	480, 049 474, 826 424, 291 472, 456 441, 195	92, 75 119, 93 40, 69 130, 25 85, 18

¹Hair of angora goat, alpaca, and other like animals included in exports for all years, and in imports and reexports prior to 1914.

*In computing these figures, stocks not taken into consideration.

*Exports for fiscal year ended June 30 of the year shown.

*No transactions.

*Imports for consumption.

² Year ended June 30.

Bureau of Agricultural Economics. Production figures, 1910–13, from the National Association of Wool Manufacturers; beginning 1914, from the Bureau; imports and exports from the Bureau of Foreign and Domestic Commerce.

Notz.—The total United States production is combing and clothing wool only.

Table 364.-Wool, shorn: Estimated production by States, 1932-34

	I	Production			ber of fle		Weig	ht per flo	ece 2
State and division	1932	1933	1934	1932	1933	1934	1932	1933	1934
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	1,000 pounds 444 101 238 59 12 50 2,736 36 3,270	1,000 pounds 384 88 208 59 12 50 2,701 37 3,411	1,000 pounds 378 90 211 53 12 48 2,775 38 3,589	Thou- sands 74 16 35 10 2 9 380 6 436	Thou-sands 64 14 32 10 2 9 370 6 461	Thou- sands 62 14 31 9 2 8 375 6 485	Pounds 6.0 6.3 6.8 5.9 5.6 7.2 6.0 7.5	Pounds 6.0 6.3 6.5 6.9 6.0 5.6 7.3 6.2 7.4	Pounds 6.1 6.4 6.8 5.9 6.0 7.4 6.3 7.4
North Atlantic	6, 946	6, 950	7, 194	968	968	992	7.2	7. 2	7. 3
Ohio- Indiana- Illinois- Michigan Wisconsin-	15, 455 4, 782 4, 559 8, 282 3, 145	15, 810 4, 599 5, 749 7, 840 2, 774	16, 506 4, 800 4, 468 7, 856 2, 664	1,908 655 619 1,010 425	1, 928 630 818 980 380	1, 965 640 585 958 365	8. 1 7. 3 7. 4 8. 2 7. 4	8. 2 7. 3 7. 0 8. 0 7. 3	8. 4 7. 5 7. 6 8. 2 7. 3
East North Central.	36, 223	36, 772	36, 294	4, 617	4, 736	4, 513	7.8	7.8	8. 0
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	6,638 7,901 7,048 7,636 8,768 1,885 3,168	6, 814 7, 410 7, 351 7, 056 9, 200 2, 731 3, 461	7, 137 7, 898 7, 384 6, 972 9, 960 2, 311 3, 328	885 1, 013 1, 054 920 1, 096 254 463	885 938 1,109 840 1,150 366 505	915 975 1,082 840 1,245 308 467	7. 5 7. 8 6. 7 8. 3 8. 0 7. 4 6. 8	7. 7 7. 9 6. 6 8. 4 8. 0 7. 5 6. 9	7.8 8.1 6.8 8.3 8.0 7.5 7.1
West North Cen- tral	43, 044	44, 023	44, 990	5, 685	5, 793	5, 832	7. 6	7. 6	7. 7
North Central	79, 267	80, 795	81, 284	10, 302	10, 529	10, 345	7. 7	7.7	7. 9
Delaware	24 570 2, 185 2, 994 346 48 112 115	24 583 2, 166 3, 021 360 48 112 114	18 573 2, 012 2, 870 352 48 108 115	4 92 446 565 77 12 31 37	4 94 442 581 80 12 31 38	3 94 428 552 75 12 31 37	6. 0 6. 2 4. 9 5. 3 4. 5 4. 0 3. 6 3. 1	6. 0 6. 2 4. 9 5. 2 4. 5 4. 0 3. 6 3. 0	6. 0 6. 1 4. 7 5. 2 4. 7 4. 0 3. 5 3. 1
South Atlantic	6, 394	6, 428	6, 096	1, 264	1, 282	1, 232	5. 1	5.0	4.9
Kentucky. Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	4, 250 1, 533 144 257 220 403 1, 102 57, 105	4, 170 1, 621 151 257 230 402 1, 154 74, 800	4, 238 1, 487 126 263 212 371 1, 312 60, 485	850 365 40 78 49 112 145 7,050	834 377 42 78 51 115 148 7,875	865 354 35 73 46 103 160 7, 608	5. 0 4. 2 3. 6 3. 3 4. 5 3. 6 7. 6 8. 1	5. 0 4. 3 3. 6 3. 3 4. 5 3. 5 7. 8 9. 5	4.9 4.2 3.6 3.6 4.6 3.6 8.2 8.0
South Central	65, 014	82, 785	68, 494	8, 689	9, 520	9, 244	7. 5	8. 7	7.4
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	32, 300 16, 500 31, 513 12, 320 16, 884 5, 220 18, 160 7, 125 5, 506 17, 982 24, 219	33, 276 17, 372 29, 808 12, 774 17, 430 4, 988 17, 630 6, 708 5, 640 18, 105 24, 632	35, 966 18, 445 33, 212 13, 122 17, 136 4, 980 17, 512 6, 358 6, 208 19, 775 21, 876	3, 400 1, 940 3, 463 1, 600 2, 520 870 2, 270 950 605 2, 220 3, 370	3, 540 2, 020 3, 240 1, 539 2, 490 860 2, 050 860 613 2, 130 3, 128	3, 707 2, 170 3, 496 1, 661 2, 520 830 1, 990 883 640 2, 273 3, 209	9. 5 8. 5 9. 1 7. 7 6. 0 8. 0 7. 5 9. 1 8. 1 7. 2	9. 4 8. 6 9. 2 8. 3 7. 8 8. 6 7. 8 9. 2 8. 5 8	9.7 8.5 9.5 7.9 6.8 6.0 8.8 7.2 9.7 8.7 6.82
Western	187, 729	187, 763	194, 590	23, 208	22, 470	23, 379	8. 1	8. 4	8, 3
United States	345, 350	864, 721	357, 658	44, 431	44, 769	45, 192	7.77	8. 15	7.91

¹ Include fleeces taken at commercial feeding plants. California figures include some fleeces taken from early lambs.

² In States where sheep are shorn twice a year, principally Texas and California, this figure covers wool per head of sheep shorn and not weight per fleece.

Bureau of Agricultural Economics: estimates of the Crop Reporting Board.

TABLE 365.—Wook: Estimated production in specified countries, average 1926-30. annual 1929–34

Country	Average, 1926-30	1929	1930	1931	1932	1933	1934 1
SOUTHERN HEMISPHERE	Afillion pounds 926. 1	Million pounds 937. 6	Million pounds 912. 1	Million pounds 1,006.6	Million pounds 1,061.7	Million pounds 975.6	Million pounds 2 1,010.0
Australia New Zealand 3 4	266. 4 26. 7	272.9 3 24.7	271.1 26.7	282. 8 26. 3	288. 4 5 25. 9	300. 5 25. 7	5 307.0
Chili Agrentina 6	332.8	312.0	334.0	364.0	340.0	348.0	366.0
Uruguay 3 Union of South Africa 5	140.1	151.1	152.6	7106.0	7 110. 2	7 104. 7	115.0
Union of South Africa	294. 1	303.8	305.0	306. 0	316.3	274. 0	245. 0
Total 5 countries reporting to 1934	1, 959. 5	1,977.4	1, 974. 8	2, 065. 4	2, 116. 6	2, 002. 8	2, 043. 0
NORTHERN HEMISPHERE							
North America: United States:	310.3	327. 6	350.3	372. 2	345. 4	\$64.7	357.7
ShornPulled 9	53. 6	54.5	61. 9	66. 1	67. 1	64. 2	(60. 5)
Total	363. 9	382.1	412. 2	438. 3	412. 5	428.9	418. 2
Canada	19. 5	20.3	21.0	20.4	20. 5	19.3	19. 5
Europe: United Kingdom (England and Wales, Scotland, and Northern Ireland)		110.4	111.0	113.0	119.0	120.0	110.0
Irish Free State	18.0	10 18.6	10 18.9	10 19.3	10 19. 6	10 19.6	5 17. 0
Norway	5.6	5.0	5.2	5.5	5.7	5 5.8	6.0
France Spain 11	46.5	46. 1 73. 2	45. 2 (66. 0)	44.1 66.1	43. 2 5 70. 0	43.0	5 42. 4
Italy 11	53.3	49.6	47.9	44.0	10 42. 0		
Germany Czechoslovakia ¹¹	34. 8 3. 7	31.9 3.7	\$ 30.6 3.7	* 30. 8 2. 7	5 30.8 2.3	30.0 2.0	5 29.8
Hungary	12. 2	(11.5)	13.0	12.8	8.8	8.0	2.1 58.0
Hungary Yugoslavia ⁵ Greece Rumania ¹¹	28. 3	28.0	28.0	28.8	30. 5	30.8	31.1
Greece	14. 0 66. 9	³ 15. 6 65. 5	5 12. 2 63. 6	14. 6 65. 1	14. 9 62. 7	16.0 62.4	5 15.6
Poland 5	9. 5	10.4	9.6	9.8	9.5	9.6	5 9. 6
Latvia		3. 4	3. 3	3.3	3.6	4.1	5 6. 5
Total 13 countries reporting to	287. 3	284, 6	280. 7	284. 7	287. 9	288.9	278. 1
Africa and Asia: 12							
Algeria	41.9	47.2	49.3	28.1	39. 3	5 39. 3	5 41. 2
Turkey	9. 9	5.0	14.1	14.8	10. 2	14.0	13 12.0
Total 17 Northern Hemisphere countries reporting to 1934	722, 5	739. 2	777.3	786.3	770. 4	790, 4	769. 0
Total 22 Northern and Southern Hemisphere countries report- ing to 1934	2, 682. 0	2, 716. 6	2, 752. 1	2, 851. 7	2, 887. 0	2, 793. 2	2, 812. 0
Estimated world total excluding Union of Soviet Socialist Republics and China 14	3, 225. 0	3, 251, 0	3, 286. 0	3, 387. 0	3, 412, 0	15 3, 310. 0	
-			<u> </u>		<u> </u>		
Union of Soviet Socialist Republics China 17	362. 9 78. 0	394. 0 78. 0	306. 0 78. 0	16 212. 0 78. 0	16 142. 0 78. 0	16 138.0	16 142. 0

³Estimates based on exports alone or exports, stocks, and domestic consumption and any other available

Estimate of the National Council of Wool Selling Brokers of receipts for first 8 months of season.

^{*}Estimates based on exports alone or exports, stocks, and domestic consumption and any other available information.

*Years 1924 to 1926 supplied by the Empire Marketing Board. Years 1927-28 to 1932-33 Official Year-book of New Zealand 1934 and Monthly Abstract of New Zealand Statistics, August 1934. The estimates of Dalgety & Co. used formerly are as follows in millions of pounds, with secured wool included at its scoured weight: Average 1926-30, 235.6; 1929, 241.8; 1930, 265-7; 1931, 265.5; 1932, 265.5; 1933, 262.7.

*Estimates based on sheep numbers at date nearest shearing and other available data.

*Estimates of the Buenos Aires branch of the First National Bank of Boston, based on exports, stocks, and domestic consumption except that production for 1931 and 1932 have been revised upward provisionally to take care of excess exports in 1932-33.

*Preliminary estimate. Reports of increase range from 5 to 15 percent.

*Estimates of C. O. Taylor, formerly United States agricultural attaché in South Africa.

*Published as reported by pulleries and is mostly washed. The Bureau of the Census considers 1 pound of pulled wool the equivalent of 1½ pounds of grease.

10 Estimates of the Imperial Economic Committee (formerly Empire Marketing Board).

11 Revisions based on recent census figures of wool production or of sheep numbers.

(*Footnotes continued on p. 589)

Table 365—Wool: Estimated production in specified countries, average 1926-30, annual 1929-34-Continued

Footnotes-Continued

13 Provisional estmate based on prospects of a 15 to 20 percent reduction in 1934, due to losses of sheep in

13 Provisional estmate based on prospects of a 15 to 20 percent reduction in 1934, due to losses of sheep in Roumelia and Anatolia.

14 Totals subject to revision. Few countries publish official estimates of wool production. In the absence of official figures for many countries various estimates have been used. Some have been furnished by United States Government representatives abroad and others have been based on reports of sheep numbers, average fleece weights, and any other available data. For some principal exporting countries the figures are seasonal exports alone, or estimates derived from exports, carry-over, and domestic consumption. In the case of most Asiatic countries the figures are rough commercial estimates.

15 Estimate based on production in 34 countries as compared with 1932.

16 Estimate based on sheep numbers and average yield as derived from official estimates for recent years. The Union of Soviet Socialist Republics program called for 353,000,000 pounds in 1931 according to the Economic Handbook of the Soviet Union, but this estimate appears much too large considering the decrease in sheep numbers since 1929.

sheep numbers since 1929.

17 Unofficial estimate based on sheep numbers in 1932. Owing to poor marketing conditions in recent years exports of sheep's wool not reliable index of production.

Bureau of Agricultural Economics.

This table includes wool shorn during the calendar year in the Northern Hemisphere and that shorn This table includes wool shorn during the calendar year in the Northern Hemisphere and that shorn during the season beginning July 1 or Oct. 1 of the given calendar year in the Southern Hemisphere, the bulk being shorn during the last 6 months of the given calendar year. Pulled wool is included in the total for most important countries at its grease equivalent. Figures in parentheses are interpolated or carried forward. See Foreign Crops and Markets annual wool review in May or June 1934 for table showing all countries and monthly World Wool Prospects for current revisions.

Table 366.—Wool, shorn: Average price per pound received by producers, United States, 1925-34

Year	Jan. 15	Feb.	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct.	Nov.	Dec. 15	Weighted average
1925	Cents 42.8 38.9 30.9 33.2 35.9 27.4 17.4 12.5 8.9 24.6	Cents 43. 2 37. 7 31. 1 34. 4 35. 9 25. 9 16. 4 13. 0 8. 8 25. 4	Cents 43. 0 34. 7 31. 3 35. 4 35. 5 23. 7 15. 9 12. 5 8. 9 26. 9	Cents 40.8 33.2 30.4 35.6 33.8 21.4 15.6 11.0 10.1 26.2	Cents 36. 9 32. 0 30. 1 37. 0 31. 3 19. 6 14. 4 8. 8 17. 7 23. 4	Cents 35. 7 31. 4 30. 2 38. 7 30. 2 19. 2 13. 0 7. 2 21. 3 21. 9	Cents 39. 4 31. 9 30. 7 37. 6 29. 4 19. 2 12. 7 7. 0 22. 4 21. 4	Cents 38. 1 31. 9 31. 2 37. 0 29. 2 19. 8 13. 1 7. 4 22. 5 20. 4	Cents 37. 8 32. 6 31. 2 36. 5 29. 0 20. 2 13. 2 9. 1 23. 0 19. 5	Cents 37. 2 31. 6 30. 9 36. 0 28. 6 19. 6 12. 5 9. 5 23. 6 19. 3	Cents 37. 8 31. 6 31. 1 35. 9 28. 5 19. 0 13. 1 9. 4 23. 8 19. 2	Cents 39. 5 30. 1 32. 0 35. 6 27. 8 18. 4 12. 9 9. 2 24. 2 18. 5	Cents 39. 6 33. 9 30. 6 36. 4 30. 2 19. 5 13. 5 8. 7 20. 6 1 22. 3

¹ Preliminary.

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of sheep, Jan. 1, to obtain a price for the United States. Average for the year obtained by weighting State price averages for the calendar year. Data for earlier years in 1928 Yearbook, table 422. Only monthly prices are comparable.

Table 367.—Wool: Average price per pound in Boston market, 1925-34 SCOURED BASIS, TERRITORY, GRADES 64's, 70's, 80's (FINE STRICTLY COMBING)

	age
	Cents 139 116 110 116 98 76 63 47 67 82

GREASE BASIS, OHIO AND SIMILAR, GRADE 56's (THREE-EIGHTHS BLOOD STRICTLY COMBING)

Bureau of Agricultural Economics. Prices from the livestock and meat reporting service of the Burcau, Earlier data in 1931 Yearbook, table 420.

Table 368.—Wool, grades 56's, 64's-67's: Average price per pound at London. clean basis, 1925-34

GRADE 56's

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925	Cents 105. 00 60. 80 58. 80 77. 00 75. 00 40. 55 21. 29 20. 73 20. 66 58. 91	Cents 90.80 60.80 68.00 80.00 69.95 40.55 24.33 23.04 21.03 54.52	Cents 89. 00 60. 80 71. 00 81. 10 63. 90 34. 47 29. 91 21. 61 19. 67 52. 00	Cents 80. 90 59. 80 66. 00 79. 55 61. 80 35. 48 28. 39 19. 92 21. 63 51. 53	Cents 72.80 58.30 66.90 78.00 58.80 37.51 26.36 18.38 24.99 48.40	Cents 73, 85 56, 80 67, 40 77, 50 56, 75 37, 00 25, 35 18, 23 28, 00 42, 59	Cents 74, 90 58, 80 67, 90 77, 00 54, 70 36, 00 24, 84 19, 60 32, 94 37, 81	Cents 70. 75 59. 80 68. 40 74. 00 52. 70 34. 50 23. 32 20. 64 33. 77 35. 88	Cents 66, 60 60, 80 68, 90 71, 00 50, 69 32, 44 21, 29 21, 69 36, 93 33, 29	Cents 66. 60 59. 80 70. 95 70. 00 46. 64 30. 42 20. 26 20. 52 38. 90 35. 00	Cents 66. 60 57. 00 73. 00 50. 69 26. 36 24. 02 19. 79 51. 50 33. 26	Cents 66, 60 58, 80 75, 00 74, 00 50, 69 26, 36 21, 09 19, 13 51, 16 35, 03	Cents 77. 03 59. 36 68. 52 76. 01 57. 69 34. 30 24. 20 20. 27 31. 76 43. 18

GRADES 64's-67's

			119.70	115.95	112.20	112.60	113.00				111.00	101.00	115.12
	97.30				97.70			94.80			92.75	90.75	95.51
	89, 20			94.30	95.30	95.80	96.30		97, 40	98.40	99.40	99.40	95.97
	101, 40	102.00							95.30	90.00	93. 30	91.20	98.46
	91.20		85. 20				73.50		66.91	64.88		62.86	75. 55
1930	54.75	54.75		52.72	55.76				50.69	50.69	44.61	41.57	51.28
1931	34.47	38. 53	44.61	42.58	42,58				34.47	30.79	31.78	26.00	36.95
1932	29.31	30. 24	29.57	28.91	27.56			29.33	31, 10	29.72	27.98	27.32	28.87
1933	28.71	29.94	28. 25	30.95	35, 23	41.79	52.31	52.53	56.36	54.46	68.66	67.15	45. 53
1934	71.53	69. 20	71.10	71.39	68.08	61.52	56.71	51,71	45, 78	47.35	45, 73	45.34	58.79

Bureau of Agriculture Economics. These data were obtained from prices given by Kreglinger & Fernau for the opening and closing of each series of the London wool sales. For months when no sales were held the figures are interpolations of nearest actual prices. Conversions at monthly average rate of exchange as given in Federal Reserve Bulletins to December 1925, and October 1931 to December 1934; others at par.

Table 369.—Wool: International trade, average 1925-29, annual 1931-33

				Calenda	ar year			
Country	Average	1925-29	19:	31	199	32	193	31
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES	1,000 pounds 739, 123	1,000 pounds 3,990	1,000 pounds 812,265	1,000 pounds 1,170	1,000 pounds 855, 181	1,000 pounds 2, 153	1,000 pounds	1,000 pounds
Argentina Union of South Africa New Zealand	294, 973 254, 431 220, 228	302 576 103 0	310, 252 242, 092 211, 719	84 612 6 0	289, 878 379, 095 238, 179	1, 006 27 0	349, 934 288, 151 286, 280	71 1, 149 3 0
UruguayChinaBritish IndiaChile	117, 856 58, 272 50, 373 26, 196	568 27, 843 435	144, 572 35, 310 39, 785 22, 377	747 16, 118 163	95, 120 38, 130 30, 903 25, 058	3 270 12, 783 52	34, 180 49, 017 24, 153	736 18, 097 3
Algeria Morocco Irish Free State Iran 4	24, 047 13, 345 12, 706	3, 632 0 1, 282	11, 066 2, 536 10, 877	1, 479 0 926	7,001 369 9,933	1, 466 0 945	10, 720 777 18, 745	2, 108 0 791
Iran 4 Hungary Brazil Peru	11,715	1, 380 1, 643	11, 543 7, 194 15, 412 9, 287	1,616	10, 457 2, 318 3, 907 9, 213	1, 180	3, 968 5, 500 12, 910	3, 285
Spain Egypt Tunis	9 715	4, 918 127 1, 383	2, 677 3, 807 1, 172	10, 643 151 491	2,310 2,469 651	14, 945 2 600	3, 359 3, 570 1, 242	9, 090 13 927
Total		47, 929	1, 892, 943	33, 906	1, 970, 177	35, 541	1, 092, 506	36, 273
PRINCIPAL IMPORT- ING COUNTRIES								
France United Kingdom Germany United States Belgium Italy Japan Union of Soviet So-	54, 037 24, 109 322	633, 028 473, 061 361, 447 288, 346 135, 887 99, 134 93, 489	56, 971 35, 771 30, 476 274 33, 121 6, 985	570, 223 600, 730 326, 575 158, 385 137, 189 105, 094 189, 714	39, 415 41, 911 14, 363 179 58, 352 3, 001	563, 167 612, 214 318, 666 56, 535 147, 107 158, 804 205, 178	53, 359 69, 502 14, 091 19 139, 737 5, 463	681, 853 623, 739 351, 778 178, 928 213, 040 189, 335 240, 640
cialist Republics. Czechoslovakia. Poland. Switzerland. Austria. Canada. Sweden. Netherlands. Yugoslavia. Rumania.	1, 398 45 973 7, 307 241 2, 830 117 1, 287	46, 095 35, 889 30, 255 17, 404 16, 490 13, 930 10, 826 10, 518 5, 559 84, 011	2, 422 261 643 158 4, 770 217 3, 062 75	67, 747 40, 220 35, 345 18, 402 13, 127 10, 849 11, 735 16, 335 6, 535 3, 204	0 1,375 107 240 77 3,712 309 2,990 195 393	57, 141 32, 623 29, 321 22, 016 16, 729 8, 717 12, 431 16, 613 2, 895 1, 601	13 1, 916 212 320 317 11, 258 419 5, 746 189	62, 910 32, 414 37, 549 19, 150 19, 554 13, 761 12, 540 17, 653 4, 596
Denmark Finland Bulgaria Greece Norway	355 3 641	2,808 2,806 2,699 2,063 1,812	142 18 300 237	4, 041 2, 269 3, 685 2, 901 1, 835	169 0 510 129	4, 650 3, 391 3, 928 1, 929 1, 995	291 0 882 439	5, 215 4, 564 1, 764 2, 935 1, 807
Total	181, 236	2, 287, 557	176, 874	2, 326, 140	167, 427	2, 277, 651	304, 173	2, 715, 72

1 Preliminary.

Bureau of Agricultural Economics; official sources except where otherwise noted.

"Wool" in this table includes washed, unwashed, scoured, pulled wool, slipe, also hair—camel's, mohair, angora goat, cashmere goat, and alpaca. The following items have been considered as not within this classification: Carded, combed, dyed wool, flocks; sheep, lamb, and goat skins with hair on, mill waste, really and tons. noils, and tops.

² International Yearbook of Agricultural Statistics.

³ Does not include Manchuria after June 30, 1932.

⁴ Does not include Manchuria after June 30, 1932.

⁵ Excess of reaports over imports.

⁶ Excess of reaports over imports.

Table 370.—Goats and mohair: Estimates of goats clipped, mohair produced, and average clip per goat (principal producing States), 1932-34

State	Go	oats clipp	oed	Mohai hai	r (includ r) produ	ing kid ced	Average clip per goat clipped 1		
21410	1932	1933	1934 ²	1932	1933	1934 2	1932	1933	1934 2
Texas ³ New Mexico	Thou-sands 3, 421 250 200 37 115 66	Thou-sands 3, 342 245 160 32 87 71 3, 937	Thou-sands 2, 795 220 150 35 87 72 3, 359	1,000 pounds 14,000 1,000 760 130 460 145	1,000 pounds 13,700 1,020 550 112 350 163	1,000 pounds 10,342 925 510 126 348 158	Pounds 4. 2 4. 0 3. 8 3. 5 4. 0 2. 2 4. 0	Pounds 4.1 4.2 3.4 3.5 4.0 2.3 4.0	Pounds 3.7 4.2 3.4 3.6 4.0 2.2 3.7

¹ In States where goats are clipped twice a year figures include both spring and fall clip.

Bureau of Agricultural Economics; estimates of Crop Reporting Board.

Table 371.—Imported meat and meat food products, Federally inspected and passed, United States, 1925-34

Year ended June 30	Chilled and me		Canned and	Other meat	Total weight	
	Beef	Other	cured meats	products		
1925	Pounds 5, 612, 600 9, 975, 359 14, 956, 143 38, 168, 121 53, 085, 288 23, 909, 708 2, 612, 713 540, 141 404, 510 142, 181	Pounds 11, 827, 557 12, 402, 230 22, 508, 681 18, 880, 547 15, 704, 658 6, 783, 637 1, 314, 170 1, 402, 900 942, 227 225, 996	Pounds 12, 857, 043 19, 258, 401 43, 714, 607 63, 189, 480 89, 511, 853 98, 128, 109 23, 854, 583 25, 465, 159 33, 254, 553 42, 842, 437	Pounds 2, 877, 640 3, 144, 968 5, 454, 741 12, 102, 633, 215 8, 065, 195 5, 651, 509 3, 530, 632 2, 644, 628 886, 371	Pounds 33, 174, 840 44, 780, 958 86, 634, 172 132, 340, 783 169, 865, 014 136, 886, 709 33, 423, 975 30, 938, 832 37, 245, 918 44, 096, 985	

Bureau of Animal Industry.

² Preliminary.
3 Most goats clipped twice a year. In Texas, kids are clipped in fall of year of birth. Figures include both goats and kids clipped.

Table 372.—Meat and meat products: International trade, average 1925-29, annual 1931-33

			Calend	er veer			
				u. juai			
Country Average 19	925-29	19	31	19	32	198	33 1
Exports I	mports	Exports	Imports	Exports	Imports	Exports	Imports
Argentina 2, 028, 126 United States 1, 421, 054 Denmark 640, 468 Netherlands 534, 982 New Zealand 442, 571 Urnguay 396, 117 Australia 380, 162 Canada 144, 720 Brazil 131, 003	1,000 oounds 465 147,765 147,765 1,02 26,692 206,537 1,102 15 6,691 27,305 10,511 66,964 45,836	1,000 pounds 1,544,619 978,632 1,040,604 480,630 519,769 268,654 350,546 34,147 184,108	1,000 pounds 348 51,672 18,221 165,480 0 7,411 13,962 2,786 65,210 6,585	1,000 pounds 1, 436, 879 865, 549 1, 025, 304 352, 909 581, 727 229, 642 446, 075 62, 440 116, 866 65, 472 146, 344	1,000 pounds 101 51, 765 12, 691 97, 030 790 0 1, 910 10, 037 695 29, 562 3, 085	1,000 pounds 1,429,967 945,101 797,034 274,400 651,235 434,847 99,153 136,931 69,617 109,099	1,000 pounds 100 68,037 10,047 80,605 658 0 2,118 13,279 918 2,215
Sweden 61, 961 China 48, 376 Chile 40, 829 Hungary 33, 182 Yugoslavia 27, 751 Union of South Africa 24, 551 Rumania 21, 413 Estonia 6, 888	46, 886 3, 672 4, 206 6, 733 9, 664 15, 118 1, 948 1, 455	91, 086 48, 167 29, 892 20, 116 17, 763 23, 648 13, 094 9, 500	47, 287 3, 436 2, 776 6, 276 8, 715 19, 053 2, 017 514	67, 750 3 22, 486 34, 426 13, 270 16, 800 17, 224 5, 987 10, 214	46, 371 3 4, 558 204 5, 336 10, 906 6, 377 1, 111 214	64, 992 24, 302 29, 579 17, 996 14, 926 24, 155	2, 433 53, 741 3, 959 5, 662 9, 717 11, 750
	629, 565 294, 287	5, 938, 528 2, 182, 744 2, 338, 657	422, 438 213, 473	5, 517, 364 1, 937, 285	282, 743 138, 988	5, 133, 799 1, 723, 900	265, 411 135, 760
Total beef 2, 874, 958 Total pork 2, 285, 198 Total mutton and lamb 609, 574 Total unclassi-	150, 691 1, 419	742, 460	78, 487 853	2, 236, 653 781, 282	41, 023 530	2, 032, 514 747, 362	17, 783 392
fied 791, 432	183, 168	674, 667	129, 625	562, 144	102, 202	630, 023	111, 476
Total 3, 561, 162	629, 505	5, 938, 528	422, 438	5, 517, 364	282, 743	5, 133, 799	265, 411
PRINCIPAL IMPORTING COUNTRIES							
United Kingdom 127, 797 3, Germany 42, 080 France 62, 427 Italy 18, 680 Belgium 60, 122 Cuba. 750	827, 365 838, 653 299, 085 233, 627 213, 736 180, 592	115, 615 64, 497 57, 764 17, 817 33, 429 356	4, 217, 133 463, 257 299, 523 168, 854 204, 809 88, 355	93, 627 34, 210 50, 537 13, 131 19, 728 491	4, 061, 931 518, 461 167, 541 166, 485 152, 098 54, 416	41, 561 27, 892 44, 840 11, 848 16, 935	3, 846, 309 423, 333 163, 871 153, 922 150, 295
Austria 8, 495 Czechoslovakia 9, 837 Japan 115 Mexico 7, 230	124, 462 101, 778 68, 636 82, 698 36, 970 31, 148 30, 242 19, 972 19, 812	11, 577 6, 333 146 93 2, 503 5, 367 2, 829 6, 823 43	204, 809 88, 355 92, 526 80, 489 76, 479 58, 351 21, 561 32, 240 32, 615 8, 401 17, 529	4,007 2,987 296 61 5,318 5,343 2,738 6,473	41, 260 58, 466 49, 730 42, 666 16, 488 39, 643 31, 685 8, 157 15, 760	4, 207 2, 399 347 27 6, 849 5, 056 2, 170 7, 489	28, 852 44, 423 24, 608 39, 120 11, 074 51, 254 29, 582 9, 569
Norway	15, 306 13, 250 12, 912 12, 557 7, 603	1, 335 775 1, 340 873 98	17, 329 11, 906 15, 047 3, 439 17, 314 3, 647	1, 087 685 897 1, 658 105	9, 063 16, 868 2, 942 14, 211 3, 061	980 716 1, 275 2, 383 83	8, 450 15, 338 14, 322 3, 394
	170, 404	329, 613	5, 913, 475	243, 380	5, 470, 932	177, 057	5, 017, 716
Total beef 126, 843 2, 0 32, 980 2, 3	696, 113 176, 466	110, 878, 38, 046	2, 197, 605 2, 334, 735	76, 978 20, 668	877, 949 2, 293, 717	41, 190 42, 697	1, 816, 045 1, 951, 154
Total unclassi-	680, 356	3, 415	871,087	1, 196	829, 999	1, 024	802, 840
пед 190, 840	817, 469	177, 274	510, 048		1, 469, 267	92, 146	447, 677
Total 360, 848 6,	170, 404	329, 613	5, 913, 475	243, 380	5, 470, 932	177, 057	5, 017, 716

Bureau of Agricultural Economics; official sources.

Preliminary.
 Year ended June 30.
 Does not include Manchuria after June 30, 1932.

Table 373 .- Meat and meat food products prepared under Federal inspection. 1925-84

Year ended June 30	Pork placed in cure	Sausage	Canned meats	Lard	Lard com- pounds and substi- tutes	Oleo prod- uets	Oleo- marga- rine	All other products	Total
1925	1,000	1,090	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds
	3,176,714	736, 877	214, 650	1,733,933	458,518	287, 271	133, 836	2,170,278	8, 912, 077
	2,850,675	771, 741	214, 166	1,598,754	543,913	275, 636	148, 331	2,007,854	8, 411, 070
	2,920,206	765, 074	248, 459	1,691,344	535,175	280, 641	148, 384	1,971,827	8, 561, 110
	3,036,063	778, 311	255, 379	1,846,796	472,839	237, 506	152, 085	2,201,933	8, 980, 912
	2,992,898	785, 463	285, 808	1,817,601	467,077	228, 531	158, 881	2,210,438	8, 946, 697
	2,981,864	783, 629	303, 094	1,807,144	433,495	223, 889	159, 413	2,268,407	8, 960, 935
	2,851,938	697, 798	283, 547	1,662,397	482,482	212, 925	117, 819	2,135,789	8, 444, 695
	2,760,367	663, 644	240, 882	1,715,349	411,935	197, 495	86, 717	2,213,493	8, 289, 882
	2,782,341	670, 497	251, 944	1,787,967	322,146	174, 637	74, 545	2,192,960	8, 257, 037
	2,786,042	760, 434	361, 502	1,682,523	323,494	170, 117	87, 333	2,355,128	8, 526, 563

Bureau of Animal Industry.

Table 374.—Livestock: Number of animals slaughtered under Federal inspection and number of whole carcasses condemned, 1925-34

	Cat	tle	Cal	ves	Sheep lam		Go	ats	Ho	gs	Ho	rses	er
Year ended June 30	Total	Condenned	Total	Condemned	Total	Condemned	Total	Condemned	Total	Condemned	Total	Condemned	Total slaughter
1925	Thou-sands 9, 774 10, 098 10, 050 9, 040 8, 284 8, 281 8, 209 7, 975 7, 736 9, 653	Thou-sands 92. 1 103. 5 69. 4 61. 9 59. 5 52. 4 53. 8 54. 0 81. 6	Thou-sands 5, 185 5, 312 5, 080 4, 774 4, 526 4, 491 4, 732 4, 605 4, 548 5, 673	Thou-sands 11. 1 11. 9 10. 6 9. 9 8. 9 9. 5 9. 1 10. 2 12. 4 17. 8	Thou-sands 12, 203 12, 354 12, 894 12, 984 13, 769 15, 307 17, 300 18, 660 17, 284 16, 429	Thou-sands 12.7 14.5 16.4 15.4 20.1 22.9 18.5 17.6 16.6 22.3	Thou-sands 27 43 30 20 21 22 9 8 7 7	Thou-sands 0.1 .1 .1 .1 .1 .1 .1 .0 .0	Thou-sands 48, 460 40, 443 42, 650 48, 347 47, 164 46, 689 44, 021 45, 852 45, 698 45, 773	Thou- sands 180. 4 143. 6 154. 2 139. 4 135. 4 121. 8 139. 9 132. 6 153. 2	Thou-sands 12 40 43 107 117 136 135 100 50 33	Thou-sands 0.0 .1 .2 .3 .4 .5 .7 .3 .2 .3	Thou-sands 75, 660 68, 289 70, 747 75, 273 73, 881 74, 926 74, 406 77, 200 75, 323 77, 569

¹ The numbers of condemned carcasses are expressed in thousands and tenths; that is, the last figure represents hundreds. These figures do not include parts of carcasses, data concerning which may be obtained from the Bureau of Animal Industry.

Bureau of Animal Industry.

Table 375.—Hides, packer: Average price per pound at Chicago, 1925-34

			Steers				Cows		В	ulls
Calendar year	Heavy native	Heavy Texas	Light Texas	Butt brand- ed	Colo- rados	Heavy native	Light native	Brand- ed	Native	Branded
1925 1926 1927 1928 1929 1939 1930 1931 1931 1932 1933 1934	Cents 15. 96 14. 08 19. 28 23. 85 16. 98 13. 87 9. 06 6. 04 9. 67 9. 92	Cents 15.08 13.38 18.21 22.91 16.08 13.76 8.96 5.92 9.60	Cents 14.06 12.67 17.49 22.26 15.16 12.55 8.34 5.14 9.09 8.60	Cents 15. 16 13. 34 18. 23 22. 95 16. 11 13. 73 8. 96 5. 91 9. 66	Cents 14. 12 12. 82 17. 74 22. 26 15. 39 13. 18 8. 48 5. 47 9. 18 9. 10	Cents 14.82 12.71 18.03 22.96 15.86 11.78 8.04 5.17 8.89 8.70	Cents 14. 62 13. 11 18. 66 22. 63 15. 75 11. 71 8. 43 5. 63 9. 28 8. 72	Cents 13.30 12.05 17.26 21.79 14.86 11.19 7.76 5.20 8.78 8.25	Cents 11. 98 9. 98 14. 09 17. 64 11. 42 8. 30 5. 53 3. 86 6. 93 6. 45	Cents 10. 29 8. 50 12. 88 16. 62 10. 17 7. 30 4. 78 3. 19 6. 18 5. 69

Bureau of Agricultural Economics. Compiled from annual reports of the Chicago Board of Trade.

The above figures do not represent production, as a product may be inspected more than once in course of further manufacture.

Table 376.—Hides, country: Average price per pound at Chicago, 1925-34

Calendar year	Ex- tremes	Heavy steers	Heavy cows	No. 1 buffs	No. 2 buffs	Bulls	Country packer brands	Country brands	No. 1 calf- skins	No. 1 kip- skins
1925	Cents 14, 41 13, 46 18, 60 22, 04 14, 98 11, 18 7, 77 4, 88 8, 13 8, 05	Cents 12. 94 11. 63 16. 02 18. 53 12. 09 8. 50 6. 02 3. 78 6. 32 6. 02	Cents 11. 64 9. 54 14. 85 18. 05 11. 55 8. 40 5. 61 3. 40 5. 08 5. 67	Cents 12. 26 10. 70 16. 26 19. 71 12. 82 9. 14 6. 32 4. 15 7. 23 6. 83	Cents 11. 25 9. 70 15. 26 18. 71 11. 82 8. 14 5. 32 3. 15 6. 23 5. 83	Cents 9. 46 8. 03 11. 49 14. 88 8. 92 5. 90 2. 39 4. 64 4. 17	Cents 12. 52 10. 52 15. 54 19. 18 11. 88 9. 49 6. 70 3. 32 5. 50 5. 50	Cents 10. 54 9. 00 13. 89 17. 38 10. 80 7. 73 5. 05 2. 85 5. 12 5. 13	Cents 21, 88 18, 02 20, 47 27, 84 20, 72 17, 43 11, 81 6, 38 12, 58 11, 86	Cents 18. 12 16. 12 19. 96 25. 23 18. 72 15. 92 10. 42 6. 28 11. 72 10. 06

Bureau of Agricultural Economics. Compiled from annual reports of the Chicago Board of Trade. Data for earlier years in 1928 Yearbook, table 435.

Table 377.—Horses and mules: Number and value on farms, Jan. 1, and yearly weighted average price received by producers, United States, 1910-35

		н	orses	;		M	Iules	
Year	Num-	Fari	n value	Weighted yearly	Num-	Farm	value	Weighted
	ber 1	Per head ¹	Total	price per head 2	ber 1	Per head ¹	Total	yearly price per head?
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1920 1922 1923 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1933 1934 1935	Thou-sands 19,833 20,277 20,569 20,567 20,962 21,159 21,210 21,555 21,482 20,092 19,366 18,760 18,123 17,365 16,640 16,067 14,203 14,708 13,169 12,621 12,203 11,963 11,963 11,963 11,963	Dollars 108. 03 111. 46 105. 94 110. 77 109. 32 103. 33 101. 60 102. 89 104. 24 98. 45 71. 05 70. 51 65. 42 64. 28 65. 32 66. 68 69. 68 69. 68 69. 68 60. 42 53. 75 66. 30 76. 18	1,000 dollars 2,142,524 2,259,981 2,172,694 2,278,222 2,291,638 2,190,102 2,149,786 2,182,307 1,938,447 1,637,181 1,332,822 1,277,838,447 1,637,181 1,332,822 1,277,950 934,763 955,564 795,725 671,591 793,155 901,038	Dollars 138. 20 130. 10 108. 30 130. 60 124. 50 123. 40 126. 10 127. 40 116. 60 111. 90 91. 50 75. 00 69. 30 70. 70 72. 30 68. 80 72. 90 59. 20 59. 20 59. 20 57. 90	Thou-sends 4, 210 4, 323 4, 386 4, 449 4, 593 4, 723 4, 954 5, 656 5, 77 5, 895 5, 918 5, 903 5, 903 5, 120 5, 647 5, 496 5, 120 6, 036 4, 795	Dollars 120, 20 125, 92 120, 21 124, 31 123, 35 118, 15 128, 81 135, 83 148, 25 117, 37 187, 79 82, 91 60, 58 81, 54 98, 21	1,000 dollars 505, 049 544, 359 552, 245 551, 017 552, 834 558, 006 672, 922 838, 530 677, 475 518, 558 512, 067 507, 432 490, 668 481, 153 490, 668 481, 153 490, 585 492, 683 494, 493 361, 562 310, 585 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596 491, 596	87, 60 92, 40 84, 10 87, 70 88, 60 86, 20 70, 20 60, 70 62, 10 81, 70 94, 40

¹ As reported for Jan. 1.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Revised: Annual averages of prices, by States, weighted by number of animals coming 4 years of age in computing United States averages.

3 Preliminary.

Table 378.—Horses and mules: 1 Number on farms and farm value per head, by States, Jan. 1, 1933-35

			Ho	rses					M	ıles		
State and division	1	Numbe	r	Fari	n value head 2		N	umber	•	Fari	n valu head 2	e per
	1933	1934	19353	1933	1934	1935	1933	1934	1935 ³	1933	1934	1935
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	51 17 47 22 4	sands 48 16 46 21 4 18 285 32	32	Dol. 104, 00 90, 00 90, 00 101, 00 90, 00 92, 00 97, 00 96, 00	Dol. 116.00 95.00 107.00 106.00 95.00 102.00 109.00 115.00 109.00	Dol. 135. 00 106. 00 131. 00 133. 00 125. 00 131. 00 120. 00 125. 00	sands	2	sands	Dol.	Dol.	Do!.
Pennsylvania North Atlantic		279 749	282 745		109. 00						112. 00 110. 63	
Ohio	460 412 742	451 404 727 362 507	451 400 705 366 516	87. 00 72. 00 60. 00 91. 00	100. 00 82. 00 70. 00 105. 00 91. 00	111. 00 98. 00 85. 00 114. 00	33 82 126 6	32 84 122		88.00 77.00 67.00 91.00		107. 00 105. 00 96. 00 113. 00
East North Central	2, 492	2, 451	2, 438	75. 01	87. 06	99. 38	254	251	242	73. 76	85. 06	101. 22
Minnesota_ Iowa_ Missouri_ North Dakota_ South Dakota_ Nebraska_ Kansas_	760 955 551 532 552 676 651	745 936 551 521 524 665 644	738 927 551 510 498 645 638	57. 00 59. 00 45. 00 46. 00 39. 00 46. 00 41. 00	59. 00 55. 00 48. 00 58. 00	70. 00 54. 00 55. 00 64. 00	79 288 8 17 88	8 15 81	15 70 255 8 15 73 110	64. 00 60. 00 45. 00	76.00 57.00 60.00 72.00	89. 00 89. 00 62. 00 64. 00 80. 00
West North Central.			4, 507	48. 64	60. 71	68. 52	641	596	546	57. 65	73. 83	84. 63
North Central		7, 037	6, 945	57. 81	69. 89	79. 36	895	847	788	62. 22	77. 16	89. 72
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia Florida	16 89 178 103 75 23 33	101 73 22 32	15 85 160 100 73 21 31	64. 00 68. 00 66. 00 74. 00 67. 00 63. 00 59. 00	81. 00 80. 00 85. 00 85. 00 82. 00 78. 00	88. 00 99. 00 98. 00 100. 00 103. 00 99. 00 92. 00 79. 00	28 90 12 265 165 326	88 12 268 165	9 28 87 11 271 168 333 40	89. 00 73. 00 89. 00 77. 00 69. 00	90. 00 103. 00 98. 00 81. 00 116. 00 117. 00 112. 00 99. 00	122.00 118.00 93.00 140.00 137.00 135.00
South Atlantic	535	513	504	66. 58	81.35	97. 89	937	945	947	78.36	111. 18	133. 28
Kentucky Tennessee Alabama Mississippi Arkansas Louislana Oklahoma Texas	55 86 116 103 439 727	53 85 116 99 431 727	205 150 54 90 118 100 435 712	49. 00 45. 00 39. 00 35. 00 32. 00	63. 00 64. 00 52. 00 47. 00 40. 00 53. 00	81. 00 73. 00 64. 00 56. 00 45. 00 57. 00	315 322 347 319	325 344 306 176	256 306 319 337 300 171 238 931	59. 00 64. 00 65. 00 53. 00 51. 00 56. 00 45. 00 47. 00	83. 00 91. 00 78. 00 66. 00 70. 00 70. 00	100.00 104.00 112.00 96.00 80.00 83.00 78.00 80.00
South Central	1,879	1,857	1,864	35. 65	50. 76	59. 41	2, 990	2, 925	2, 858	53.89	73. 76	89. 80
Montana Idaho Vyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	121 72 83 34 155 154 180	380 182 149 312 114 73 81 34 155 154 173	352 184 142 312 108 73 81 34 161 154 168	24.00 35.00 26.00 31.00 25.00 32.00 46.00 35.00 47.00 54.00	47.00 36.00 41.00 39.00	62. 00 44. 00 51. 00 40. 00 45. 00	87 44 26 21 12 3 3 20 14 37	8 7 4 24 19 12 3 3 20 13 36	8 7 4 22 18 12 3 19 13 34	40.00 41.00 54.00 50.00	54.00 51.00 54.00 53.00	62.00 62.00 66.00 63.00 65.00 63.00
Western			1, 769	35. 07	46. 39	55, 4 5	155	149	143	45. 72	59. 71	72. 92
United States	12, 203	11, 963	11, 827	53. 75	66. 30	76. 18	5, 036	4, 925	4, 795	60. 18	81. 54	98. 21

Including colts.
 Sum of total value of subgroups (classified by age), divided by total number and rounded to nearest dollar for States.
 Division and United States averages not rounded.
 Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

DAIRY AND POULTRY STATISTICS

Table 379.—Milk cows: Number and farm value per head in the United States, 1880-1935

	Milk cow	s on farms		Milk cow	s on farms		Milk cows	on farms
Year	Number 1	Farm value per head Jan. 1 ²	Year	Number ¹	Farm value per head Jan. 1 ²	Year	Number ¹	Farm value per head Jan. 1 2
1880 3 1880 1881 1882 1883 1884 1885 1885 1886 1887 1888 1889 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898	12, 027 12, 369 12, 612 13, 126 13, 501 14, 235 14, 522 14, 856 15, 953 16, 020 16, 416 16, 424 16, 436 16, 505 16, 138 15, 942	Dollars 23. 27 23. 95 25. 89 30. 21 31. 37 29. 70 27. 40 26. 08 24. 65 23. 94 22. 14 21. 62 21. 40 21. 75 21. 77 21. 97 22. 55 23. 16 27. 45	1899 1900 3 1900 1901 1902 1903 1905 1906 1907 1908 1909 1910 1911 1911 1912 1913 1914 1915 1916 1917	15, 253 15, 521 15, 521 16, 073 16, 459 17, 277 17, 650 17, 937 18, 154 20, 625 18, 206 18, 312 18, 526 18, 526 18, 932 19, 526	Dollars 29. 66 30. 18 28. 65 27. 91 28. 85 27. 90 26. 21 29. 60 29. 29 30. 90 33. 70 38. 17 37. 62 42. 99 51. 51 52. 84 51. 49 56. 95	1918 1919 1920 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1930 1930 1931 1932	21, 455 21, 440 21, 822 22, 099 22, 288 £0, 600 22, 505 22, 311 22, 159 22, 129 22, 330 £1, 124 22, 910 23, 576 24, 475 25, 285 26, 185	Dollars 67, 37 74, 68 81, 51 61, 20 48, 69 48, 68 49, 94 48, 38 54, 73 59, 24 73, 47 83, 99 82, 80 57, 10 39, 57 29, 26 27, 11 30, 38

¹ Prior to 1990, estimates for each 10-year period represent an index of annual changes applied to the census as a base on first report after census data were available. Figures for 1900 to 1919 are tentatively revised estimates of the Bureau of Agricultural Economics for numbers on Jan. 1. Figures from 1920 to 1931 are revised estimates made in 1932, based upon study of 1930 census report. Figures for 1900-1935 relate to "cows and helfers 2 years old and over Jan. 1, kept for milk."

¹ Values for 1880-99 relate to "milk cows." Data for 1900-1925 are an old series of values of "milk cows" adjusted to relate to "milk cows and helfers, 2 years old and over." on basis of relationship between the 2 series from 1926 to 1928. Conversion factor was 0.955 (base is old series). Data for 1926-35 are values relating to "milk cows and helfers 2 years old and over."

Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

and 1930, "number of cows milked in 1924 and 1929." Census dates were June 1 from 1880 to 1900; Apr. 15, 1910; Jan. 1, 1920 and 1925; Apr. 1, 1930.

Table 380.—Milk cows, heifers, and heifer calves: Number on farms, by States, Jan. 1, 1933-35

				_, _,								
	Cow	s and	heifers r, kept	, 2 year for m	rs old a	and	old be	s 1 to 2 ing ke	pt for	1 year	calves being	kept
State and division	N	lumbe	r	Valu	e per l	nead	m	ilk cow	's	101	milk ed	ws
	1933	1934	1935 ¹	1933	1934	1935 1	1933	1934	19351	1933	1934	19351
	Thou- sands	Thou- sands	Thou- sands	Dol- lars	Dol- lars	Dol- lars	Thou- sands	sands		sands	sands	
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	149 81	151 82	147 82	36.00 46.00	33.00 41.00	38.00 48.00	40 19	40 19	38 18	41 19	42 19	39 17
Vermont	303	288	276	40,00	38.00	43.00	58	53	49 19	62 21	53 21	49 21
Rhode Island	129 21	133 22	136 21	64.00 68.00	64. 00 68. 00	70.00	3	19 3	3	4	4	3
Connecticut	114	115	115	60.00	62.00	71.00	18	18 234	17 237	19 240	19 244	18 234
New York	1, 438 122	1, 431 127	1, 359 133	49.00 63.00	76.00	84.00	17	19	20	22	22	22
Pennsylvania	904	922	931	42.00	44.00	45.00	153	155	146	161	168	155
North Atlantic	3, 261	3, 271	3, 200	47. 18	48. 80	52. 53	549	560	547	589	592	558
Ohio	966 774	995 814	985 795	32.00 29.00	29.00 25.00	31.00 31.00		181 142	174 130	187 150	195 146	175 134
Indiana Illinois	1, 122	1, 178	1, 178	32.00	29.00	34.00	219	209	189	235	232	209
Michigan Wisconsin	867 2, 175	902 2, 212	893	33. 00 30. 00	30, 00 28, 00	35.00 33.00	157 395	160 387	147 356	165 400	169 392	151 349
East North Central.		6, 101	5, 975	31. 02					996	1, 137	1, 134	1,018
			1, 734	25, 00	23. 00	26, 00	339		289	367	378	314
Minnesota	1,776 1,503	1,865 1,593		29.00	27, 00	28.00	288	288	255	293	319	280
Iowa Missouri	1,051 667	1, 072 701	922 596	23.00 25.00	19. 0 0	22.00	190		153	210 150	225 165	187 99
North Dakota	650	675		24.00	20, 00	22, 00	150	150		175	175	115
Nebraska	735 868	772	712 855	27.00 25.00	26.00	27.00	131		119 119	138 165	150 175	124 152
Kansas			800									
West North Central			6, 951	25. 65	22, 91	_				1, 498	1, 587	1,271
North Central		13, 708	12, 926	28.06	25. 29			2,477	2, 126	2, 635	2,721	2, 289
Delaware Maryland	36 188		36 192			41.00 39.00		27	5 26	28 28	4 27	26
Virginia	402	406	398	27.00	26.00	1 28.00	11 49	1 49	46	55	50	47
Virginia. Vest Virginia North Carolina South Carolina	227 328	236 337	239 343		27.00 27.00	27.00 29.00	33	34 69		38 75	38 75	34
South Carolina	154	156	156	27.00	28.00	1 28.00	29	28	29	32	31	73 32
Georgia Florida	356 93	375	382	19.00 29.00	20.00 30.00	20.00	87	90	87 16	92 18	94 17	91 15
	-					-	-	-				322
South Atlantic					26. 80	-	_			342		
Kentucky Tennessee	544 527				21.00 19.00				72 85		100	88 93
Alabama	413	430	434	18.00	18.00	19.00	99	101	. 99	131	134	132
Alabama Mississippi Arkansas Louisiana	526 454	552 477	558 463	15.00 18.00	15.00 15.00	1 15. O	1 9	5 76 5 96	74	95 110	96 110	
Louisiana	270	286	297	21.00	23.00	24.00) 54	56	58	60	64	65
Oklahoma Texas	766 1,391	797 1, 461	733	20.00 20.00	16.00 18.00	18.00	15	159 245				155 218
South Central						<u> </u>	-	-	-			952
Montana	201	211	194	32.00	26.00	26.00) 40	50	44	47	51	45
Idena	1 200	208	196	31.00	25. 00	28.00	D 5'	7 58	57	59	60	60
Wyoming Colorado New Mexico Arizona	73 274	78 290	64 264	31. 00 25. 00	27.00	28.00	າ 6		15	18	21 82	16 69
New Mexico	72	78	65	25. 00	25.00	27.00) 1'	7 18	16	20	22	17
Utah	45 111	1117	104	32.00	1 25. O	DI 26. 00	1 2	2 12 7 28	2 11	13	13 29	12 26
Utah Nevada Washington Oregon	21	2	21	38.00	36. 00	37.0) (6 6	3 6	3 7		7
oregon	312 255	318 267	324 270	36.00 31.00	27.00	11 37 D						72 60
California	631	643	631	38.00	35. 00	45.0	14	2 14	142	147		148
Western					28. 0	34.9	2 51	537	508	548	569	532
United States	25, 285	26, 18	25, 100	29. 26	27. 1	30. 3	8 4, 70	3 4,78	4, 28	5, 145	5, 287	4, 653
				·				<u> </u>			·	<u> </u>

¹ Preliminary. Bureau of Agricultural Economics; estimates of Crop Reporting Board. Revisions by States, 1920–27, except for heifer calves, are published in February 1932, Crops and Markets.

Table 381.—Heifers and heifer calves: Number on farms, United States, Jan. 1, 1920-35

Year	Heifers 1 to 2 years old being kept for milk cows	Heifer calves under 1 year being kept for milk cows	Year	Heifers 1 to 2 years old being kept for milk cows	Heifer calves under 1 year being kept for milk cows	Year	Heifers 1 to 2 years old being kept for milk cows	Heifer calves under 1 year being kept for milk cows
1920	Thou- sands 4, 420 4, 164 3, 972 4, 155 4, 143	Thou- sands 4,371 4,179 4,357 4,339 4,378	1925 1926 1927 1928 1929	Thou- sands 4, 171 4, 045 4, 048 4, 158 4, 404	Thou- sands 4, 274 4, 276 4, 383 4, 606 4, 911	1930	Thou- sands 4, 700 4, 775 4, 685 4, 703 4, 788 4, 286	Thou- sands 5, 005 4, 887 4, 953 5, 142 5, 287 4, 653

¹ Preliminary.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Table 382.—Milk cows: Average price 1 per head received by producers, United States, 1925-34

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Dol. 54, 80 62, 10 66, 80 83, 10 91, 50 89, 20 59, 90 42, 10 31, 70 31, 00	Dol. 54. 80 63. 40 68. 20 86. 30 91. 80 85. 00 40. 60 31. 30 32. 50	Dol. 56. 20 63. 20 70. 20 83. 00 92. 80 81. 00 56. 30 39. 40 31. 30 33. 00	Dol. 56. 80 65. 60 72. 00 88. 60 93. 60 80. 70 56. 50 39. 30 32. 00 33. 30	Dol. 57. 90 66. 60 72. 40 89. 00 94. 90 79. 50 54. 40 37. 30 34. 40 33. 30	Dol. 57. 80 66. 70 74. 20 89. 90 95. 30 77. 60 51. 50 36. 10 35. 30 32. 50	Dol. 58. 00 66. 70 74. 20 90. 40 96. 30 71. 80 49. 50 36. 40 32. 20	Dol. 58. 30 65. 40 74. 20 90. 40 95. 30 65. 90 47. 80 36. 20 34. 80 30. 60	Dol. 58. 70 66. 10 76. 10 92. 60 95. 60 66. 20 46. 70 35. 90 34. 30 32. 70	Dol. 60. 20 66. 30 78. 60 92. 90 95. 10 66. 40 45. 60 34. 40 33. 50 32. 90	Dol. 60. 70 66. 90 81. 10 93. 00 94. 50 64. 70 46. 00 33. 20 32. 10 33. 10	Dol. 60. 40 66. 70 82. 40 92. 90 92. 60 62. 00 44. 20 32. 40 31. 20 33. 60	Dol. 57. 90 65. 50 74. 20 89. 80 94. 10 74, 20 51. 30 37. 00 33. 20 32. 60

¹ As reported by country dealers.

Bureau of Agricultural Economics.

Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States; yearly price is a simple average of 12 months. Data for earlier years (on a slightly different basis) in 1928 Yearbook, table 451.

Table 383.—Average production, feed cost, and value per cow, of butterfat and milk, classified on butterfat basis, 12-month records completed in 1933 by dairy herd-improvement associations, United States

į	Pr	oduction	.	F	eed costs	3	Value of prod-	Return	Feed cost per	Feed cost per
Cows (number)	Milk	Butter- fat	Value	Rough- age, in- cluding pasture	Grain	Total	uct over		pound of but- terfat	100 pounds of milk
29 61 392 1,542 5,946 16,897 31,290 37,689 31,838 19,789 10,116 4,482 1,795 654 285 113 44 32 13 3 3 3 3 3 3 3 3 3 4 3 3 3 3 3 3 3 3	5, 227 6, 465 7, 567 8, 660 9, 762 10, 897 12, 090 13, 481 14, 771 15, 932 17, 461 17, 727 20, 176 21, 794 21, 182 20, 242 26, 654	Pounds 0 16 54 106 155 203 252 300 348 397 446 496 596 644 747 795 842 896 950 1,030	0 12 12 29 50 66 68 84 104 125 145 168 221 281 286 299 400 375 352 474 400 839	Dollars 32 155 211 225 229 330 322 333 34 451 455 50 557 771 788 56	Dollars 8 5 7 110 112 115 188 21 224 224 225 330 441 448 553 557 77 74 49	Dollars 40 20 28 34 43 47 51 55 63 67 73 82 86 93 103 104 144 155	Dollars -40 -48 -8 1 1 166 29 411 90 107 74 90 206 208 2297 2699 2388 330 245 734	Dollars 0.00 1.04 1.47 1.78 2.21 2.45 2.98 3.21 3.30 3.43 3.32 2.888 3.59 3.29 2.58	Dollars 0.00 1.25 -52 -52 -24 -21 -19 -17 -16 -14 -14 -13 -14 -13 -14 -13 -14 -13 -14 -13 -14 -15 -16 -16 -16 -16 -16 -16 -16 -16 -16 -16	Dellars 0.00 5.15 2.11 1.28 -94 -82 -73 -67 -64 -58 -58 -58 -58 -58 -58 -58 -58 -58 -58
Average	7,849	313	131	30	22	52	79	2.52	.17	. 66

Bureau of Dairy Industry.

Table 384 .- Dairy herd-improvement and bull associations. United States. 1906-31

July 1	Dairy herd-im- prove- ment associa- tions	Coopera- tive dairy bull asso- ciations	July 1	Dairy herd-im- prove- ment associa- tions	Coopera- tive dairy bull asso- ciations	January 1	Dairy herd-im- prove- ment associa- tions	Coopera- tive dairy bull as- socia- tions
1906	Number 1 4 6 25 40 64 82 100 163	Number 3 8 9 11 11 12 14	1915	Number 211 346 459 353 385 468 452 513 627	Number 15 24 36 44 78 123 158 190 218	1925	Number 732 777 837 947 1, 090 1, 143 1, 112 1, 005 881 793	Number 220 225 248 235 339 296 359 403 342 351

Bureau of Dairy Industry.

Table 385.—Purebred dairy cattle: Number registered each year, by breeds, United States, 1925-34

		Ayrshir	е		Juernsey	7	Hols	tein-Fri	esian		Jersey	
Year	Bulls	Cows	Total	Bulls	Cows	Total	Bulls	Cows	Total	Bulls	Cows	Total
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Nu m- ber 1, 561 1, 720 1, 847 2, 274 2, 586 2, 050 1, 552 1, 317 1, 430 2, 530	Num- ber 5, 972 6, 142 6, 554 7, 837 8, 833 8, 159 7, 324 6, 306 7, 542 14, 906	Num- ber 7, 533 7, 862 8, 401 10, 111 11, 419 10, 209 8, 876 7, 623 8, 972 17, 436	Num- ber 11, 299 12, 392 12, 777 14, 363 14, 661 15, 810 12, 880 1 9, 962 7, 185 7, 708	Num- ber 20, 742 22, 298 22, 694 24, 664 26, 288 28, 662 27, 964 25, 817 22, 809 27, 054	Num- ber 32, 041 34, 690 35, 471 39, 027 40, 949 44, 472 40, 844 35, 779 29, 994 34, 782	Nu m- ber 26, 935 28, 117 28, 817 33, 512 35, 438 29, 242 21, 811 13, 834 15, 521 17, 283	Num- ber 82, 659 82, 971 81, 146 88, 214 89, 927 75, 901 70, 535 54, 481 83, 002 82, 935	Num- ber 109, 594 111, 088 109, 963 121, 726 125, 365 105, 143 92, 346 68, 315 98, 523 100, 218	Num- ber 12, 131 12, 837 15, 666 19, 393 19, 230 14, 350 10, 262 7, 678 6, 217 6, 170	Num- ber 41, 725 42, 915 48, 411 54, 516 52, 431 43, 767 38, 211 33, 551 29, 239 32, 408	Num- ber 53, 856 55, 752 64, 077 73, 909 71, 661 58, 117 48, 473 41, 229 35, 456 38, 578

¹ Year ended Apr. 1.

Bureau of Dairy Industry; obtained from registry associations. See 1930 Yearbook, table 441, for data for earlier years.

Table 386.—Cattle: Tuberculin testing under accredited-herd and area plans, 1925-34

Year		Ca	ttle tested			Modi- fied ac-		Herds	Herds
ended June 30	Accredited- herd plan	Area plan	Total	Reactors	found	credited coun- ties 1	Herds ac- credited ²	200000	under super- vision 2
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Number 2, 008, 526 1, 989, 048 2, 522, 791 2, 589, 844 2, 853, 633 2, 953, 350 3, 086, 403 3, 131, 426 2, 980, 526 2, 826, 257	Number 4, 991, 502 6, 681, 732 7, 177, 385 8, 691, 646 8, 830, 087 9, 892, 521 10, 695, 870 10, 312, 131 10, 093, 388 12, 293, 506	Number 7, 000, 028 8, 650, 780 9, 700, 176 11, 281, 490 11, 683, 720 12, 845, 871 13, 782, 273 13, 443, 557 13, 073, 894 15, 119, 763	Number 214, 491 323, 084 285, 361 262, 113 206, 764 216, 932 203, 778 254, 785 255, 096 232, 368	Percent 3.1 3.7 2.9 2.3 1.8 1.7 1.5 1.9 2.1 1.5	Number 51 109 149 180 213 236 247 220 183 189	Number 24, 110 24, 009 34, 084 38, 880 1, 639 11, 863 26, 259 8 18, 049 19, 701 31, 460	Number 392, 740 382, 674 229, 086 427, 595 249, 420 227, 921 350, 735 262, 988 337, 730 342, 262	Number 414,620 435,840 261,148 473,218 281,323 347,448 356,916 303,832 346,394 387,969

¹Modified accredited counties are those in which tuberculosis does not exist among more than 0.5 per-cent of the cattle, as determined by official tuberculin testing, and from which all reactors to the test have been removed.

The figures in these columns represent net increases at the close of each year.

Represents decrease from figures for previous year.

Bureau of Animal Industry.
Current data on tuberculosis-eradication work, including progress by States and counties, may be obtained from Bureau of Animal Industry. Data for earlier years in 1928 Yearbook, table 448.

Table 387.—Milk cows and production of milk: Estimated number of producing cows, yield per cow, and production of milk by States, 1932-34

							·	·	
State and division	Milk	ows on i	arms 1	Milk	producti cow ²	on per		roduction on farms	
	1932	1933	1934 3	1932	1933	1934 3	1932	1933	1934 3
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	Thou- sands 140 76 275 126 21 110 1,370 116 877	Thou- sands 142 77 281 123 21 109 1, 378 119 897	Thou- sands 142 78 264 128 21 110 1,336 125 908	Pounds 4, 620 4, 900 4, 800 5, 710 6, 300 5, 660 5, 357 5, 900 4, 980	Pounds 4, 430 4, 750 4, 660 5, 730 6, 300 5, 600 5, 295 5, 900 4, 930	Pounds 4, 420 4, 700 4, 720 5, 525 6, 050 5, 400 5, 351 5, 980 4, 950	Million pounds 647 372 1,320 719 132 623 7,340 684 4,367	Million pounds 629 366 1, 309 705 132 610 7, 297 702 4, 422	Million pounds 628 367 1, 246 707 127 594 7, 148 4, 498
North Atlantic	3, 111	3, 147	3, 112	5, 209	5, 139	5, 161	16, 204	16, 172	16, 061
Ohio Indiana Illinois Michigan Wisconsin	912 731 1,054 822 2,074	942 762 1, 100 850 2, 106	952 775 1, 130 863 2, 085	4, 470 4, 160 4, 510 5, 100 5, 300	4,340 4,000 4,470 4,950 5,140	4, 300 3, 820 4, 380 4, 800 5, 100	4,077 3,041 4,754 4,192 10,992	4, 088 3, 048 4, 917 4, 208 10, 825	4, 094 2, 960 4, 949 4, 142 10, 634
East North Central	5, 593	5, 760	5, 805	4,837	4,702	4, 613	27,056	27, 086	26, 779
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	1, 627 1, 406 1, 012 602 560 672 817	1, 715 1, 455 1, 041 640 600 715 845	1, 715 1, 490 1, 003 620 580 720 853	4,800 4,300 3,540 3,750 3,580 4,100 4,000	4,720 4,300 3,380 3,560 3,530 4,200 3,950	4, 300 4, 100 3, 280 3, 175 2, 900 3, 880 3, 630	7, 810 6, 046 3, 582 2, 258 2, 005 2, 755 3, 268	8, 095 6, 256 3, 519 2, 278 2, 118 3, 003 3, 338	7, 374 6, 109 3, 290 1, 968 1, 682 2, 794 3, 096
West North Central	6, 696	7, 011	6, 981	4, 140	4,080	3, 769	27, 724	28, 607	26, 313
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia Florida	33 180 381 210 304 141 328 86	34 182 386 220 317 147 343 89	34 184 385 227 322 149 356 94	3, 950 4, 250 3, 360 3, 560 3, 660 3, 450 3, 080 2, 770	3, 900 4, 200 3, 160 3, 310 3, 450 3, 380 2, 960 2, 770	3, 780 4, 120 3, 180 3, 250 3, 430 3, 250 2, 820 2, 650	130 765 1, 280 748 1, 113 486 1, 010 238	133 764 1, 220 728 1, 094 497 1, 015 247	129 758 1, 224 738 1, 104 484 1, 004
South Atlantic	1, 663	1,718	1, 751	3, 470	3, 317	3, 250	5, 770	5, 698	5, 690
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	522 496 384 484 406 244 710 1, 261	536 516 405 513 433 254 749 1, 334	541 513 412 525 438 270 735 1, 335	3, 440 3, 240 3, 000 2, 740 3, 000 2, 230 2, 450 3, 180	3, 370 3, 080 2, 760 2, 500 2, 750 2, 070 3, 250 2, 930	3, 220 2, 930 2, 700 2, 300 2, 480 1, 900 2, 950 2, 800	1,796 1,607 1,152 1,326 1,218 544 2,450 4,010	1, 806 1, 589 1, 118 1, 282 1, 191 526 2, 434 3, 909	1, 742 1, 503 1, 112 1, 208 1, 086 513 2, 168 3, 738
South Central	4, 507	4,740	4, 769	3, 129	2, 923	2, 741	14, 103	13, 855	13, 070
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	183 186 69 251 67 42 107 21 295 247 599	192 193 70 262 68 44 108 21 304 252 599	191 193 68 262 68 43 106 21 309 260 609	3, 990 5, 440 3, 790 4, 000 3, 300 4, 640 5, 300 4, 880 5, 680 5, 200 6, 600	3, 850 5, 280 3, 840 4, 000 3, 150 4, 740 5, 280 4, 730 5, 350 4, 850 6, 470	3, 750 5, 020 3, 680 3, 790 2, 960 4, 900 4, 980 4, 550 5, 700 5, 050 6, 550	730 1,012 262 1,004 221 195 567 102 1,676 1,284 3,953	739 1, 019 269 1, 048 214 209 570 99 1, 626 1, 222 3, 876	716 969 250 993 201 211 528 96 1, 761 1, 313 3, 989
Western	2, 067	2, 113	2, 130	5, 325	5, 154	5, 177	11,006	10,891	11, 027
									1

Average number of milk cows on farms during year, excluding heifers not fresh.
 Excluding milk spilled or wasted on farms and milk sucked by calves.
 Preliminary.

Table 388.—Milk and butterfat produced and milk used for each purpose on farms. 1984

		Estin	ated (ا دد	<u>.</u>			Dis	positio	n of m	ilk	
	181	produ	ction	Percentage of butterfat in milk produced	Total ductio	pro-	× 33	20	2		1	<u>.</u>
	farms	per i		of butter produced	farm	IS 2	farms feed	making farms		‰	bro-	whole
	ı	уеа	r 2	<u> </u>			luc fe	makir farms	fed	55 L	>∞	[≱
State and division	cows on			0 2	í		sed as whole mi or cream on farm where produced		milk calves	ilk skimmed separated for of butterfat	Retailed by ducers	# 0 0
	ž		at	entage milk		쿒	S W	for % 03	H g	teski	P 2	sold
	ర		Butterfat	E =		Butterfat	er er	sed for butter on		1 8 2	e e	ž
	Milk	Milk	at	in in	Milk	Ħ	Used or c	Used	Whole	Sepan of bu	ete	Milk
	2	≥	Ħ	Ā								
	m			Per-	Mil- lion	Mil-	Mil- lion	Mil- lion	M1l- lion	Mil- lion	Mil- lion	Mil-
	Thou- sands	Lb.	Lb.	cent	lb.	lion lb.	lb.	lb.	lb.	lion lb. 79	lb.	lion lb.
Maine	142	4, 420	181	4.1	628	26	72	156	13	79	106	202
Maine New Hampshire Vermont	78 264	4,700 4,720	183 191	3. 9 4. 05	367 1, 246	14 50	28 63	33 37	8 29	9 160	44 58	245 899
Massachusetts	128	5, 525	210	3.8	707	27	51	14	15	9	135	483
Rhode Island	21 110	6, 050 5, 400	233 205	3. 85 3. 8	127 594	5 23	6 41	1 11	3 17	4	12 116	105 405
Connecticut New York	1, 336	5, 351	194	3.63	5 7, 149	259	385	332	250	168	565	5, 449
New York New Jersey Pennsylvania	125	5, 980	220	3.68	748	28	47	12	15	2	198	474
	908	4, 950	188	3.8	4, 495	171	413	349	108	187	740	2, 698
North Atlantic	3, 112	5, 161	193. 8	3.75	16, 061	603	1, 106	945	458	618		10, 960
OhioIndiana	952 775	4, 300 3, 820	176 159	4. 1 4. 15	4, 094 2, 960	168 123	556 411	314 158	119 71	1, 145 1, 146	391 213	1, 569 961
Indiana Iillinois	1, 130	4, 380	166	3.8	4, 949	188	564	363	124	1,534	415	1,949
Michigan	863	4, 800	182	3.8	4, 142	157	397	285	145		308	1,607
Wisconsin	2, 085	5, 100	189	3. 7	10, 634	394	541	65	308		216	6,807
East North Central	5, 805	4, 613	177.4	3.85	26, 779	1,030		1, 185	767	7,922	=	12,893
Minnesota	1, 715 1, 490	4, 300 4, 100	161 156	3. 75	7, 374 6, 109	276 232	566 607	206 297	206 177	5, 511 4, 423	190 167	695 438
North Dakota South Dakota	1,003	3, 280	138	3.8 4.2	3, 290	138	565	444	89	1.598	195	399
North Dakota	620 580	3, 175	119 110	3.75 3.8	1, 968	74 64	238 224	321 194	67 59	1, 254 1, 114	58 59	30 32
Nebraska	720	2, 900 3, 880	147	3.8	1, 682 2, 794	106	347	316	98	1,708	124	201
Kansas	853	3, 630	142	3. 9	3, 096	121	402	287	111	1,778	185	333
West North Central		3, 769	144.8	3, 84	26, 313	1, 011	2,949	2,065	807	17, 386	978	2, 128
Delaware	34 184	3, 780 4, 120	147 163	3. 9 3. 95	129 758	5 30	· 16	9 73	3 15	2 14	19 102	80 458
Virginia	385	3, 180	130	4.1	1, 224	50	286	433	37	130	110	228
Maryland Virginia West Virginia North Carolina South Carolina	227 322	3, 250 3, 430	136 147	4.2	738 1, 104	31 47		250 491	25 15	94 60	109 92	71 97
South Carolina	149	3, 250	143		1, 104 484	21	148	225	6	20	55	30
Georgia	356	2.820	124	4.4	1,004	44		500	10	66	58	102
Florida	94	2, 650	114	4.3	249	11	I	41			68	93
South Atlantic		3, 250	136. 5	4. 20	5, 690	239		2, 022	113		613	1, 159
Kentucky	541 513	3, 220 2, 930	138 129	4.3	1, 742 1, 503	75 66		437 526	30 18		145 78	195 287
Tennessee Alabama Mississippi Arkansas Louisiana	412	2,700	120	4.45	1, 112	49	296	611	9	50	65	81
Mississippi	525 438	2, 300 2, 480	104 107	4.5	1, 208 1, 086	55 47		432 420	10		54 75	242 63
Louisiana	270	1,900	84	4.4	513	23	189	97	5	24	66	132
OKIBOODIA	735	2, 950	125 123	4. 25	2, 168	92	443 904	394	48 56	884 933	166	233
Texas South Central	1, 335	2, 800			3, 738	164	3, 137	3, 958			285 934	519
7.Fortons	4, 769	2, 741	119. 7	4. 37	13, 070	571		3, 958	185	353	65	1,752
Idaho	193	3, 750 5, 020	146 198	3. 9 3. 95	716 969	38		50		513	41	236
Wyoming	68	3, 680	142	3.85	250	10	35	27	8	118	23	39
Wontana Idaho Wyoming Colorado New Mexico Arizona	262 68	3, 790 2, 960	144 118	3.8 4.0	993 201	38 8	141 42	81 30	38		48 34	262 13
Arizona	43	4,900	189	3.85	211	8	24	11	5	59	42	13 70
UESD	1 1196	4, 980 4, 550	189 173	3.8	528 96	20 4		37	16	147 61	36 14	230 6
Nevada Washington	309	5, 700	231	4.05	1, 761	71	149	68	56	572	143	773
OregonCalifornia	260 609	5, 050	217 249	4.3	1, 313	56	121	55	39	561	89	448
Western					3, 989	152		-	112		415	2, 279
	2, 130	5, 177	203. 3	3. 93	11, 027	433	958	510			950	4, 429
United States	24, 548	4, 030	158. 3	3. 93	98, 940	3, 887	12,008	10, 685	2, 659	33, 275	6, 992	33, 321

Bureau of Agricultural Economics; estimates of Division of Crop and Livestock Estimates.

¹ Estimated average number of milk cows on farms during 1934. The estimates exclude heifers not yet fresh but include some cows which had calves running with them much of the year.

2 These estimates exclude milk sucked by calves, milk spilled or lost up to the time it is measured, simmed, or delivered by farmers, and milk produced by cows not on farms.

3 Approximations based chiefly on the population in small towns and rural areas where most families purchase their milk supply directly from local farmers. Estimates include milk equivalent of cream.

4 Estimates include milk delivered to creameries, condensaries, cheese factories, and market-milk receiving stations, but exclude market milk sold to other farmers for local retail delivery.

4 As computed by counties.

Table 389.—Dairy products: Annual per capita consumption in the United States. 1924-33

Year	Butter 1	Cheese 2	Evap- orated milk ³	Con- densed milk 3	Milk used in cities and vil- lages 4	Milk equiva- lent, all products 5
	Pounds	Pounds	Pounds	Pounds	Gallons	Gallons
1924	18. 18	4. 20			38.6	91.7
1925	17.69	4. 26			38.9	92. 1
1926	17.56	4.36	11.56	2.75	39.3	94, 6
1927	17.48	4, 14	11, 59	2.60	39.6	94.4
1928	17. 21	4.11	12, 50	2, 56	39.8	94.2
1929	17.40	4. 62	13, 83	2, 75	40.8	94.3
1930	17.36	4.71	13, 68	2, 66	40.6	94.8
1931	17, 96	4.49	13, 70	2, 29	40.0	96.7
1932	18.10	4.39	14, 41	1.80	40.0	95.3
1933	17.64	4, 51	14. 23	1.66	38.8	92.7

¹ Includes both farm- and factory-made butter. These estimates include some butter used in other products such as ice cream.
³ Includes all kinds of cheese except cottage, pot, and bakers.
³ Includes some condensed and evaporated milk used in other products, also includes both whole- and

calculating per capita consumption.

Bureau of Agricultural Economics.

Consumption of butter, cheese, evaporated milk, condensed milk, and milk equivalent of all dairy products is calculated from production, foreign trade, and domestic stocks. Milk used in cities and villages is calculated from board of health reports.

TABLE 390.—Dairy products: Quantity manufactured, 1926-33

1 ABLE 390.—	-Dairy	7	roau	$c\iota s$: Qu	an	ииу т	na	пијас	uu	rea, x	192	0-33		
Product	1926	ı	1927	ī	1928	3	1929	9	1930) ;	193	1	1932	?	1933
	1,000	- -	1,000	-1	1,000	0	1,00	0	1,000	2	1,00	0	1,000	7	1.000
	pound:	, I	pound	8	poun	ds	poun	ds	poun	ds l	pour	ld8			pounds
Creamery butter	1, 451, 70	36	1, 496, 4	95	1, 487,	049	1, 597.	027	1, 595,	231	1,667.	452	1.694.	132	1, 762, 688
Whey butter (made from		- 1													
whey cream)	2,8		1, 2	17	1,	097	1,	221	2,	516	(1)	ı	(1)		(1)
Renovated or process butter	2, 50)5	4, 2	86	2,	716	2,	531	1.	850	ì.	236	1	950	1,079
American cheese:		- (1		1		-		i		-
Whole milk	335, 9	15	307, 7	77	335,	253	370,			816	374,	648	370,	743	408,631
Part skim	2, 93		3, 3	90		900		951		653	3,	108	3,	319	6,338
Full skim	1, 38	34	1,8	88		048		074		669		416		225	680
Swiss cheese (including block).	20, 8	33	18, 1	41	16,			406				234			40, 287
Brick and Munster cheese	31, 0		31, 5	46	28,	960	31,	763	33,	548	35,	484		973	36, 057
Limburger cheese	9,6	39	8,8	42	7,	437	8,	568	8,	473	8,	508	7,	897	9,469
Cream and Neufchatel cheese.	18, 19		25, 9		30,	589	34,	405				637		608	33, 438
All Italian varieties of cheese	2, 4	25	3, 3	77	3,	587	5,	948		573		493	3,	795	4,759
All other varieties of cheese	5,0	33	5, 7	63	9,	027	7,	504	7,	029	4,	851	4.	010	4,076
Cottage, pot, and bakers'	1	- 1					1		Ī				1		,
cheese	67, 9	77	75, 6	79	87,	525	94,	941	97,	641	101,	617	103,	524	100,854
Condensed milk (sweetened):	ĺ	- 1					i '							i	-
Case goods:	ł	١					1		1				1		
Skimmed			1, 6	23	1,	366	1,	632	2,	092	1,	757	1,	167	1,260
Unskimmed	154, 9	14	161, 3	55	139,	077	145.	922	121,	626	97,	469	70,	288	53,880
Bulk goods:	1	1		1					1	1			1		
Skimmed	147, 4	73	143, 7	22	154,	723	202,	475	158,	971					
Unskimmed	55, 7	37	39, 6	68	38,	660	51,	689	62,	421	45,	887	42,	628	40, 964
Unsweetened condensed milk	1	-		- 1	·					1			1	1	
(plain condensed): 2	1								ļ						
Bulk goods:]	- 1							l				l		
Skimmed	116, 7														
Unskimmed	86, 8	33	101, 3	54	89,	336	151,	662	128,	203	110,	038	96,	052	86, 992
Evaporated milk (unsweet-		١		-			1						1		-
ened):	1	- 1					l		1		1		1		
Case goods:	1	- 1					l		i		l		l		
Skimmed	11, 9	85	8, 1	.00	10,	618			1,	650		86			
Unskimmed	1, 158, 4	76	1, 273, 8	15	1, 337,	022	1, 499,	644	1, 449,	149	1, 428,	993	1, 570,	612	1,716,700
Condensed or evaporated		ı					1								
buttermilk	86, 6	87	99, 1	180	102,	452	107,	288	96,	431	64,	619	52,	167	50, 175
Dried or powdered butter-	ł .	- 1					l		l		l		į.		
milk	31, 3		38, 4		45,	502	54,	215				535			
Powdered whole milk		68	11, 4	64	9,	605	13,	202			12,	627			
Powdered skimmed milk			118, 1			990	207,								288, 114
Powdered cream	3	31	8	38		673	1	294		400	į	161		80	154
Dried casein (skim milk or	1	- 1					l		ļ				١		
buttermilk product)	16, 9		18, (537	41,	965		335		428	24,087
Malted milk	20,6	73	22, 1		21,	128	22,	850	22,	691	19,	197	13,	215	12,430
Milk sugar (crude)	4,4	76	4, (77	5,	323	8,	965	12,	779	9,	562			
Ice cream of all kinds (gal-	1	- 1					1						l		
lons) 3	215, 2	48	226, 7	56	232,	185	254,	618	240,	750	208,	239	154,	604	148,913

Included in creamery butter.
 Unsweetened condensed milk (plain condensed) was classified as "Evaporated milk (unsweetened), bulk goods"; in previous years.
 Production in commercial ice-cream factories only.

Bureau of Agricultural Economics, compiled from reports of factories made direct to the Bureau.

Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918.

Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years.

skim-milk product.

4 Milk and milk equivalent of cream consumed per capita by that part of the population not on rural farms. These estimates include some milk and cream used in such products as ice cream and supersede 18 Based on estimates of milk production on farms and elsewhere, with milk fed to calves deducted in

Table 391.—Dairy products: Quantity manufactured, by months, 1933

Total	1,000 lb. 1,762,688 1,079	408, 631 6, 338	40, 287 7, 106	28, 961 9, 469 4, 750	, 686 32, 752 4, 076	100,854	1, 260 53, 880	114, 936 40, 964	127, 197 86, 992	1, 716, 700 17, 217	50, 175 53, 260 13, 026 288, 114	24, 087 12, 430 148, 913 1, 957
Dec.	1,000 lb. 116,384	23, 179	2,320	2, 074 502 565		7, 283	4, 420	8, 451 2, 670	7, 383 4, 061	84, 755 1, 441	3,900 3,340 1,229 24,536	2, 354 893 6, 352
Nov.	1,000 lb. 115, 215 83	21,016		1,451	3, 255	7,613	147 3, 918	8, 426 2, 310	6, 688 3, 934	73, 592 1, 436	4, 183 3, 211 1, 275 20, 946	2, 114 926 6, 348 84
Oct.	1,000 lb. 130,464	29,864		1,885 950 362		8, 206	128 3,869	10, 693 3, 817	8, 255 5, 935	113, 258	4, 992 3, 594 1, 126 23, 071 13	2, 409 1, 275 8, 782 116
Sept.	1,000 lb. 140,038 68	35, 620	4,315	1,850	2, 542	7, 921	3,385	10, 129 3, 923	10, 994	129, 399 . 1, 191	4, 927 3, 759 1, 187 21, 040 30	1,899 1,019 14,933 14,933
Aug.	1,000 lb. 166, 562 94	42,867		2, 346 988 318		8, 427	142	8, 281 4, 044	14, 089 7, 811	154, 595 1, 633	5,418 4,692 1,481 21,407 13	1, 668 20, 280 279
July	1,000 lb. 176,829 126	48, 206 590		1,741 1,041 371	2, 306 27,	0, 206	4, 753	9, 853 3, 227	14, 980	179, 204	5, 076 5, 250 1, 238 25, 695 27	1,860 972 22,664 345
June	1,000 tb. 201, 960	54, 653	5, 526	3, 601 1, 192 437	2,469		110 5, 062	14, 627 4, 520	16, 539 11, 287	220, 253 1, 396	5, 390 6, 346 1, 485 31, 650 31	2, 580 1, 164 23, 531
May	1,000 lb. 191, 098 90	43, 504		3, 237 1, 065 414		9, 406	117	12, 938 4, 350	14, 024 11, 507	213, 174 1, 245	4, 413 6, 163 1, 292 30, 818	2, 376 1, 169 16, 809
Apr.	1,000 lb. 138, 306 80	32, 356	2, 089	2, 944 703 421	.2, 699 330	8, 519	4, 473	9, 426	10, 144	176, 195 1, 466	2, 614 4, 639 24, 843 54, 843	2, 047 1, 122 9, 782 113
Mar.	1,000 lb. 133, 266	28, 571	1,667	2, 479 500 405	2,902	9,095	67 4, 374	3, 128	8, 805 0, 191	145, 706	2, 863 4, 425 780 22, 780	1, 771 1, 000 7, 378 83
Feb.	1,000 lb. 122, 322	23, 868 406	1, 127	1,967		7, 666	144	7,065 2,693	7, 365	109, 622	3, 019 3, 875 701 19, 549	1, 401 956 5, 712 62
Jan.	1,000 tb. 130, 245	24,877	1, 137	2, 420 828	2,741	7, 566	127	7, 318 2, 989	7,931	116, 947	3, 380 3, 966 407 21, 770	1, 608 1, 031 6, 342 61
Product	Creamery butter 1. Renovated or process butter.	Whole milk Park Skim.	Swiss cheese (including block) Winster cheese	Brick chesse Limburger chesse All Tallan verfeiles of chesse	Neufchatel cheese. Cream cheese	Outlage, pot, and bakers' cheese	Case goods— Skimmed Unskimmed	Bkinmed Unskimmed The condensed milk (night con-		Evaporated milk (unsweetened): Case goods—Unskimmed Concentrated skim milk (for animal feed)	Condense of reporated buttermin (in- cluding concentrated product). Dried or powdered buttermilk. Powdered whole milk. Powdered skim milk. Powdered skim milk.	Uried easim (skim milk, or Duttermilk product) Malted milk Lee eream, milk Sherbets, gallons 8

¹ Includes whey butter.

¹ Unsweetened condensed milk (plain condensed) was classified as "Evaporated milk (unsweetened) bulk goods", in previous years. Bureau of Agricultural Economics; compiled from reports made direct to the Bureau.

Table 392.—Milk: Supply and distribution of milk 1 in the United States, 1924-33

Item	1924	1925	1926	1927	1928	. 1929	1930	1831	1932	1933
Supply: Milk produced— By cows on farms By cows not on farms	Million pounds 87,069 4,420	Million pounds 88, 375 4, 241	Million pounds 91, 887 4, 079	Million pounds 94, 307 3, 846	Million pounds 95, 910 3, 524	Million pounds 98, 782 3, 145	Million pounds 99, 736 2, 826	Million pounds 101, 970 2, 826	Million pounds 101, 863 2, 826	Million pounds 102, 309 2, 826
Imports for consumption: * Manufactured dairy products * Fresh milk and greem.	973 405	741	874 526	963	876 358	805 291	721 151	623 12	536	(+)
Stocks on man Jan 1	1,695	2,318 (6)	2, 219 (6)	1,669	2,007	2, 197 (⁶)	3, 127 (⁶)	2,680 185	1, 678 52	1, 417 145
Total	94, 562	96, 183	99, 585	101, 241	102, 675	105, 220	106, 561	108, 296	106, 966	107, 194
Distribution: Exports, domestic. ⁷ Manufactured dairy products ⁸ Fresh milk and cream Estiments to noncontiguous territories: Manufactured dairy products ⁹ .	697 1 146	551 1	423 (4) 131	371 1 139	382 1 182	372 2 131	310 2 144	277 1 162	178 (4) 164	(4) 180
Brooks on mand 1960, 51; Manufactured dainy products 5. Fresh cream (40 percent). Milk fed to calves on farms.	2, 318 (6) 2, 177	2, 219 (*) 2, 262	1, 669 (°) 2, 554	2, 007 (6) 2, 744	2, 197 (⁶) 2, 887	3, 127 (⁶) 3, 010	2, 680 (⁶) 2, 976	1, 678 52 2, 964	1, 417 145 2, 806	3, 763 149 2, 800
Total distribution exclusive of disappearance for domestic human consumption.	5, 339	5, 164	4, 777	5, 262	5, 599	6,642	6, 112	5, 134	4, 710	7,025
Disappearance for domestic human consuption	89, 223	91, 019	94, 808	95, 979	92,076	98, 578	100, 449	103, 162	102, 256	100, 169
Population, July 1 census estimatesthousands	113, 202 788. 2 91. 7	114, 867 792, 4 92, 1	116, 532 813. 6 94. 6	118, 197 812. 0 94. 4	119, 862 809. 9 94. 2	121, 526 811. 2 94. 3	123, 191 815. 4 94. 8	124, 070 831. 5 96. 7	124, 822 819. 2 95. 3	125, 693 796. 9 92. 7

Milk, manufactured dairy products and cream, expressed in milk equivalent.
 Imports for consumption less "general imports" of noncontiguous territories.
 Includes butter, consumption less "general imports" of noncontiguous territories.
 Includes butter, pool of storage of butter and all cheese, and manufactured stocks of condensed and evaporated milk (case goods only), dry whole milk and cream powder.
 Includes stocks in cold storage of butter and all cheese, and manufactured stocks of condensed and evaporated milk and cream powder.
 Includes profit less domestic exports of noncontiguous territories.
 Includes butter, cheese, condensed and evaporated milk, dried milk and infants' foods, and malted milk.

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Table 393.—Fluid milk and cream: Receipts ¹ at New York, Philadelphia, Boston, and Chicago, by origin, 1933 and 1934

•	New	York	Philad	lelphia	Bos	ston	Chicago
Product and State of origin	1933	1934	1933	1934	1933	1934	1934
	40-quart	40-quart units 2	40-quart units 2	40-quart units 2	40-quart units 2	40-quart units 2	40-quart
Fluid milk: Connecticut	units 2 231, 895	202, 383	unus-	unus.	unus .	unus -	units 2
Delaware	34, 887	41,706	517.018	451, 705			
Indiana	2,648	216	340	101,100			
Maine					769, 494	688, 063	
Maryland	153, 104	153, 223	847, 706	849, 866			
Massachusetts	133, 206	145, 451			544, 091	530, 629	
New Hampshire					670, 569	765, 003	
New Jersey	3, 337, 760	3, 438, 275	562, 933	595, 528	======		
New York	322, 383, 523	20, 865, 653			359, 366	341, 497	
Ohio	4,910	1, 127	2 044 805				
Pennsylvania	5, 383, 028	5, 485, 943	4, 844, 597	0,078,085	1, 883		
Rhode Island	496				1,883	12, 949	
Tennessee		1, 228, 945			3 376 147	3, 415, 786	
Vermont Virginia	1,010,010	1, 220, 940					
West Virginia			9, 367	23, 084			
Wisconsin.			122	20,00			
W 1900119111							
Total	333, 041, 773	31, 562, 922	6, 787, 631	6, 998, 768	5, 721, 550	5, 753, 927	
luid cream:							
Alabama						200	
Arkansas	e #0#	F 700			200		8, 19
Connecticut	3, 292	5, 702 983	3, 178	2, 556	200		
Delaware District of Columbia	0, 202	200	150	690			
Illinois	725		2, 263	1, 821	3, 950	1 400	179, 93
Indiana		10, 402	44, 434	20, 538	22, 563	1, 400 7, 731	20, 97
Iowa		20, 202		20,000	22,000	1,101	7, 79
Kansas					7, 975	2,000	16
Kentucky							10, 19
Maine					52, 626	45, 365	
Maryland		450	34, 202	20, 634	1,700	400	
Massachusetts	868	1,771			1,509	2, 202	
Michigan	642	200	1,400	600	45, 302	50, 915	2,41
Minnesota			5, 925	1,990	21,882	9, 299	,
Mississippi	800						31
Missouri			4,009	3, 506	30, 703	13,884	29,74
New Hampshire	23, 474	95 004	2,032	260	19,954	19, 949	
New Jersey	1, 135, 418	25, 904 1, 172, 651	2, 121	17, 902	23, 325	66,808	
Ohio	30, 248	26, 772	8, 940	9. 257	15, 435	14, 160	
Oklahoma	50, 210	20,112	0, 010	5, 201	10, 400	14, 100	6, 17. 24
Pennsylvania		176, 691	69, 497	104, 757	207	360	2
Rhode Island			00, 20.	201,10,	73	1 001	_
Tennessee					11, 383	22, 449	1,39
Texas	200		200		l		
Vermont	121, 346	90, 897			228, 457	272, 806	
Virginia			4, 434	246	l	1	
West Virginia	200		2,620	1, 385			
Wisconsin	25, 338	6, 150	83, 172	76, 470	52, 162	56, 335	259, 64
Total	1, 573, 461	1, 518, 573	268, 577	262, 612	539, 406	586, 264	527, 22

Figures include both rail and truck receipts at New York, Philadelphia, and Boston; Chicago receipts are rail only.
 40-quart units equal standard 10-gallon cans.
 Revised.

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Table 394.—Milk: Average price per 100 pounds received by producers, United States, 1925-34

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Weight- ed aver- age 1
1925	Dol. 2. 48 2. 74 2. 68 2. 67 2. 53 2. 04 1. 56 1. 44	Dol. 2.55 2.68 2.64 2.69 2.64 1.96 1.49 1.16 1.48	Dol. 2. 62 2. 56 2. 55 2. 61 2. 63 2. 38 1. 92 1. 43 1. 50	Dol. 2. 48 2. 46 2. 58 2. 51 2. 59 2. 35 1. 85 1. 39 1. 08 1. 46	Dol. 2. 47 2. 39 2. 51 2. 49 2. 53 2. 28 1. 73 1. 29 1. 14 1. 45	Dol. 2. 47 2. 35 2. 44 2. 45 2. 22 1. 66 1. 17 1. 21 1. 47	Dol. 2. 45 2. 40 2. 45 2. 45 2. 45 1. 62 1. 62 1. 33 1. 50	Dol. 2. 55 2. 37 2. 36 2. 46 2. 50 2. 18 1. 64 1. 21 1. 39 1. 52	Dol. 2. 56 2. 47 2. 48 2. 56 2. 52 2. 25 1. 70 1. 25 1. 47 1. 57	Do!. 2.73 2.46 2.55 2.60 2.55 2.30 1.72 1.28 1.51	Dol. 2. 69 2. 60 2. 56 2. 63 2. 59 2. 31 1. 73 1. 26 1. 51 1. 65	Dol. 2. 65 2. 61 2. 64 2. 65 2. 60 2. 20 1. 67 1. 26 1. 69	Dol. 2. 55 2. 50 2. 52 2. 55 2. 57 2. 26 1. 70 1. 29 1. 52

Yearly State averages weighted by volume sold to obtain yearly average for the United States, 1929-34. Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States. Prices quoted are for milk sold to dealers, factories, etc.

Table 395.—Milk: Milk dealers' average buying prices per hundredweight for standard grade milk testing 3.5 percent butterfat which is used for city distribution as milk and cream. 1925-34

[F. o. b. local shipping point or country plant]

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925	Dol. 2. 68 2. 87 2. 83 2. 87 2. 81 2. 46 1. 95 1. 55 1. 81	Dol. 2. 73 2. 79 2. 78 2. 83 2. 86 2. 77 2. 38 1. 88 1. 50 1. 80	Dol. 2. 65 2. 78 2. 74 2. 79 2. 83 2. 74 2. 33 1. 80 1. 46 1. 79	Dol. 2. 62 2. 77 2. 71 2. 79 2. 69 2. 25 1. 77 1. 47 1. 81	Dol. 2. 58 2. 64 2. 67 2. 65 2. 77 2. 63 2. 14 1. 71 1. 45 1. 81	Dol. 2. 50 2. 62 2. 65 2. 69 2. 57 2. 16 1. 69 1. 82	Dol. 2. 55 2. 65 2. 63 2. 66 2. 76 2. 60 2. 13 1. 62 1. 57 1. 86	Dol. 2. 65 2. 68 2. 67 2. 73 2. 77 2. 60 2. 20 1. 64 1. 67 1. 91	Dol. 2. 66 2. 71 2. 68 2. 76 2. 82 2. 73 2. 14 1. 64 1. 72 1. 97	Dol. 2. 79 2. 76 2. 75 2. 82 2. 85 2. 69 2. 14 1. 68 1. 77 2. 02	Dol. 2. 78 2. 79 2. 78 2. 86 2. 88 2. 69 2. 10 1. 64 1. 79 2. 03	Dol. 2.80 2.84 2.81 2.88 2.86 2.59 2.00 1.57 1.80 2.04	Dol. 2. 67 2. 74 2. 72 2. 77 2. 81 2. 68 2. 20 1. 72 1. 60 1. 89

Bureau of Agricultural Economics. Compiled from reports of the Bureau, secured through the cooperation of milk distributors, producers' associations, and municipal officers.

Table 396.—Milk: Average prices per hundredweight paid producers by condensaries for milk testing 3.5 percent butterfat, f. o. b. factory, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925	Dol. 1. 92 2. 17 2. 28 2. 27 2. 23 1. 87 1. 42 1. 12 . 95	Dol. 1. 93 2. 06 2. 28 2. 22 2. 18 1. 71 1. 35 . 99 1. 10	Dol. 1. 93 2. 03 2. 20 2. 08 2. 14 1. 69 1. 27 . 95 1. 11	Dol. 1.93 1.93 2.14 2.05 2.07 1.68 1.21 .93 .81 1.02	Dol. 1.88 1.81 2.00 1.97 1.99 1.67 1.12 .86 .93 1.06	Dol. 1. 82 1. 79 1. 91 1. 92 1. 58 1. 04 . 81 1. 00 1. 09	Dol. 1. 91 1. 79 1. 91 1. 96 1. 91 1. 54 1. 02 . 77 1. 09	Dol. 1. 98 1. 84 2. 00 2. 07 1. 96 1. 61 1. 02 . 80 1. 10 1. 21	Dol. 2. 01 1. 95 2. 07 2. 16 1. 97 1. 72 1. 12 . 85 1. 09 1. 17	Dol. 2.09 2.00 2.15 2.19 2.04 1.75 1.22 .86 1.10 1.20	Dol. 2. 15 2. 09 2. 20 2. 21 2. 07 1. 67 1. 23 . 86 1. 32	Dol. 2. 15 2. 22 2. 25 2. 28 2. 02 1. 56 1. 19 1. 92 1. 00 1. 35	Dol. 1.81 1.97 2.12 2.12 2.04 1.67 1.18 .98 1.14

Bureau of Agricultural Economics. Compiled from reports of the Bureau, secured through the cooperation of firms operating condensaries.

Table 397.—Milk and cream, condensed and evaporated: International trade, average 1925-29, annual 1930-33

					Calend	ar year				
Country	Average	1925-29	19	30	19	31	19	32	193	3 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports
PEINCIPAL EXPORT- ING COUNTRIES United States United States United States United States Uniterland	118, 215 76, 691 55, 666 32, 287 20, 852 18, 462 9, 804 8, 658 2, 582 532	1,000 pounds 291 2,830 35 17 142 70 789 1,335 1,598 1,496 23	1,000 pounds 393, 151 90, 459 72, 660 51, 916 20, 470 11, 459 13, 447 5, 141 9, 720 7, 389 280 2, 331	1,000 pounds 695 1,611 15 6 164 21 111 1,761 416 1,420 281	1,000 pounds 415,437 75,085 63,432 49,233 14,458 11,280 6,374 6,565 9,541 294 1,004	1,000 pounds 1,328 1,245 18 1 148 4 155 1,461 734 1,808 250 9	1,000 pounds 396, 933 50, 807 29, 461 56, 591 317, 469 8, 330 4, 882 10, 233 6, 467 20 1, 813	1,000 pounds 109 1, 188 01 55 1, 009 25 55 1, 009 295 45, 036 178 91	1,000 pounds 371, 049 37, 090 20, 324 53, 718 23, 069 4, 119 4, 720 14, 426 7, 530 9 1, 961	1,000 pounds 1,11 1,11 1 13 1,03 46,79
Total		8, 906	678, 423	6, 502	663, 367	7, 161	604, 049	8, 032	538, 115	9, 33
PRINCIPAL IMPORT- ING COUNTRIES United Kingdom Luba Netherlands Indies Philippine Islands. British India. Germany 6 Prance Linina Union of South Africa Indo-China Greece Jamaica Aligeria Trimidad and To- bago Trunis Ceylon Brazil Brazil Brazil Austria 6 Poland Poland Poland Poland Poland Poland Poland Poland Poland Poland Poland Poland Poland	0 15 0 1,960 8,910 0 27 320 0 0 162 0 186 0 0	280, 504 47, 460 22, 265 25, 810 22, 365 15, 079 13, 493 12, 227 11, 305 9, 171 8, 593 7, 076 6, 276 6, 276 4, 198 3, 694 4, 198 3, 694 1, 431 1, 431 1, 431 1, 431 1, 431 1, 356 1, 324	22, 441 0 0 0 0 6, 772 13, 127 0 0 447 786 80 0 0 1, 054 0 0 0 1, 054	291, 010 38, 767 33, 416 29, 077 27, 261 14, 351 14, 965 11, 353 4, 310 8, 396 7, 708 8, 311 7, 218 5, 129 6, 057 4, 130 2, 332 1, 205 1, 508 1, 808 1, 384	13, 685 0 0 0 0 2, 839 12, 594 0 1,060 2, 228 0 0 3 3 1 0 0 0 88 0 0 0 0 0 3 3 1 3 3 3 3 5	313, 077 16, 433 28, 695 35, 253 21, 531 1, 966 17, 610 10, 026 2, 510 7, 679 5, 969 6, 208 5, 988 7, 069 4, 533 3, 242 1, 647 494 1, 780 1, 802 2, 23 1, 647 1, 780 1, 802 1, 802	9,919 0 0 0 2,335 12,990 0 1,678 2,388 0 0 2 32 155 0 0 0 1 4 3 207	307, 267 11, 352 24, 456 28, 526 19, 217 1, 187 8, 031 7 9, 422 1, 37 3, 549 4, 874 11, 473 6, 963 3, 767 5, 242 2 6, 973 4, 142 3, 304 1, 533 3, 767 5, 242 2 1, 304 1, 533 3, 767 6, 968 6, 973	19, 496 0 0 0 1, 171 11, 195 0 983 2, 999 0 0 0 0 0 0 12 174	273, 41 5 10, 26 19, 49 5, 67 8, 94 9, 20 2, 13 1, 64
Total	<u> </u>	514, 031	45, 536	520, 444		510, 671	29, 119	465, 794	36, 030	358, 2

Bureau of Agricultural Economics; official sources except where otherwise stated.

¹ Preliminary.
2 International Yearbook of Agricultural Statistics.
3 Exports include powdered milk.
4 Imports include powdered milk.
5 Java and Madura only.
6 Includes some powdered milk.
7 Figures for Manchuria not included after June 1932.
8 Figures for 12 months ended Mar. 31 of following year.

Table 398.—Milk, standard or grade B: Retail price 1 per quart, delivered to family trade in cities. 1922-31

City	1922	1923	1924	1925	1926	1927	1928	1929	1000	1001	1000	1000	4004
City	1922	1920	1924	1920	1920	1927	1928	1929	1930	1931	1932	1933	1934
	Cents		Cents	Cents	Cents	Cents	Cents					Cents	
Boston New York	13. 6 14. 6	14.3 14.8	13. 4 13. 9	13. 9 14. 8	14.5 15.0	14. 7 15. 3	15.2	15.4	15.3	12.9	10.5	11.0	11.3
Philadelphia	11. 2	12.5	12.0	12.0	12.2	13. 0	15.6 13.0	16. 0 13. 3	15. 7 13. 0	14.7	12.0	11.1	12.6
Pittsburgh	12. 5	14.3	14.1	14.1	14.0	14.5	14.0	14. 2	13. 0	11.7 11.6	10.0 8.9	9.9 9.2	11.0
Cleveland	11.4	13.8	13. 3	14.0	14.2	14. 2	13.9	12.5	12.1	10.7	8.7	8.9	10. 4 10. 5
Indianapolis	10. 4	11.8	11.9	11.0	12.0	12.0	12.1	12.3	11.9	10.2	9.4	8.5	9.0
Chicago	12.0	13.5	14.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	11.2	9.8	9. 5
Detroit	12. 5	13.8	13.8	13.6	14.0	13. 9	14.0	14.0	13. 1	11.6	9.1	9.2	10. 5
Milwaukee	9. 2	10.4	10.8	10.0	10.8	11.0	11. ŏ	11. 2	11.4	9.9	8.3	8.4	9. 3
Minneapolis	10.4	11.4	11.0	11.3	11, 1	11. 2	12.0	12.0	11.0	10.0	8.1	7.1	9. 2
St. Louis	11.1	13.0	13.0	13.0	13.0	13.0	13.0	13.0	12.9	11.7	10.1	10.1	11.0
Kansas City, Mo	11.9	13.0	13.0	13.0	13.0	13.0	13.4	13.5	13. 2	12.2	10.2	9.8	11.0
Washington, D. C	13. 3	14. 2	14.3	14. 2	14.6	15.0	14.9	14.5	14.5	14.1	13.3	12.6	12.9
Jacksonville	16.0	17.0	18.0	18.8	20.2	19. 2	18.6	18.6	18.5	15.8	12.7	13.4	14.5
Louisville	10.2	12.4	12.5	12.7	12.5	12.5	12.6	13.0	12.4	11.3	10.0	10.3	11.2
Birmingham	17.1	16.0	16.9	18.0	18.0	17.0	18.0	16.1	16.0	13.5	13.0	13. 2	14.
New Orleans Dallas	14. 0 14. 0	14. 2 15. 0	14.3 15.0	13. 2 15. 0	14.0 12.8	14.0 12.4	14.0 12.3	14. 0 13. 0	14. 0 13. 0	12.7	10.7	11.0	10.3
Butte	12. 2	12.8	13. 3	13. 4	13.1	13. 0	13.0	13.0	13.0	11.0 12.4	9.4	8. 5 10. 0	10.2
Denver	10.0	12.0	11.9	11. 2	12.0	12.0	12.0	12.0	11.0	10.0	10.0	10.0	10.
Salt Lake City	8.8	10.1	9.8	10.6	10.3	10. 5	10.0	10.0	10.0	9.9	9.0	8.8	10.
Seattle	12.6	12.5	10.8	12. 2	12.6	12.0	11.7	12. 2	11.0	10.7	9.6	9.7	10.
Portland, Oreg		12. 2	11.2	11.4	12.0	11.9	12.0	12.0	12.6	10.4	9.1	9.0	10. 2
Los Angeles	14. 2	15.0	15.5	14. 9	15. ŏ	15.0	15.0	15.0	14.6	12.6	10.5	10.7	10.8
San Francisco	12.6	12.8	14.0	14.0	14.0	14. Ŏ	14.0	14.0	14.0	11.8	12.0	11.3	12.0

¹ Dealers' selling prices per quart, delivered to homes.

Bureau of Agricultural Economics; compiled from reports of the Bureau secured through the cooperation of milk distributors, producers' associations, and municipal officers.

Table 399.—Butterfat: Average price per pound received by producers, United States, 1925-34

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Aug. 15	Sept.	Oct. 15	Nov. 15	Dec. 15	Weight- ed aver- age
1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934.	Cents 40. 6 45. 2 46. 9 48. 5 47. 6 36. 7 26. 2 22. 8 18. 9 16. 1	Cents 37. 9 43. 1 46. 8 46. 0 47. 8 35. 4 25. 0 19. 8 15. 8 21. 6	Cents 41. 5 42. 9 48. 0 46. 5 48. 3 34. 9 27. 5 15. 1 23. 5	Cents 40. 5 40. 4 47. 1 45. 4 46. 5 37. 3 26. 4 17. 8 16. 5 21. 0	Cents 40. 3 39. 1 43. 6 44. 4 45. 4 36. 5 21. 2 16. 3 20. 2 21. 5	Cents 39. 9 39. 3 40. 8 43. 5 43. 6 31. 6 20. 5 14. 6 19. 7 22. 2	Cents 40.5 38.6 40.3 43.3 43.4 31.6 21.1 14.4 23.0 22.1	Cents 41.3 38.6 39.4 44.3 43.3 35.2 23.9 17.5 18.4 24.3	Cents 42.6 40.5 41.6 46.5 44.6 37.7 26.6 17.6 19.6 24.0	Cents 47. 1 42. 4 44. 4 47. 0 45. 6 37. 0 30. 3 17. 8 20. 1 24. 3	Cents 47.8 44.8 45.8 47.6 43.5 35.3 28.2 18.4 20.4 27.2	Cents 47. 6 47. 9 47. 8 49. 2 41. 9 30. 6 27. 3 21. 1 18. 0 28. 2	Cents 41. 9 41. 3 43. 7 45. 6 45. 2 34. 5 24. 8 17. 9 18. 8 22. 7

Bureau of Agricultural Economics. Quotations include some purchases other than for the manufacture of butter. Based on reports of special price reporters. Monthly prices, by States, weighted by number of milk cows Jan. 1, to obtain a price for the United States; yearly price obtained by weighting State yearly acreage by estimated volume sold, 1929—34. Data for earlier years in 1928 Yearbook, table 465. Only monthly prices are comparable.

Table 400.—Creamery butter: Production in factories, United States, 1924-33

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	1,000 lb.	1,000	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000	1,000	1,000	1,000
1929 1930 1931 1932	87, 468 87, 121 97, 893 97, 965 101, 045 103, 519 108, 382 118, 354 124, 320	80, 218 94, 222 95, 522 99, 394 99, 963 102, 252 109, 596 124, 894	95, 760 92, 302 112, 432 111, 451 111, 777 114, 404 115, 679 126, 792 133, 095	106, 012 107, 023 121, 049 126, 415 118, 849 133, 684 133, 271 145, 367 141, 741	139, 954 145, 478 155, 912 168, 808 156, 294 174, 341 184, 385 183, 783	161, 992 164, 253 178, 276 188, 792 181, 037 192, 869 189, 788 194, 256	164, 443 158, 920 159, 554 170, 484 167, 601 185, 317 167, 559 161, 296 163, 370	137, 836 136, 738 133, 294 146, 808 145, 430 152, 192 137, 420 140, 395	115, 102 108, 325 116, 732 113, 546 119, 499 123, 582 122, 580 120, 936 127, 386	104, 520 103, 068 102, 399 105, 894 118, 116 120, 247 126, 569 121, 819	85, 492 88, 481 86, 058 87, 745 97, 186 101, 974 117, 035 109, 790	91, 136 90, 853 88, 247 92, 484 101, 854 111, 694 123, 073 120, 841	1, 356, 080 1, 361, 526 1, 451, 766 1, 496, 495 1, 487, 049 1, 597, 027 1, 595, 231 1, 667, 452 1, 694, 132 1, 762, 688

Bureau of Agricultural Economics. Compiled from reports of factories made direct to the Bureau. Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918. Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years. Data for earlier years in 1928 Yearbook, table 461.

Table 401.—Creamery butter ¹ production in factories, by States, average 1927-31, annual 1932 and 1933

State	Average 1927-31	1932	1933	State	A verage 1927–31	1932 ·	1933
Maine New Hampshire Vermont Massachusetts Rasode Island Connecticut	35 4, 594 1, 922 53	1,000 pounds 50 2,455 1,193 15 333	1,000 pounds 39 2,383 1,263 12 321	Kentucky	16, 239 1, 676 7, 195	16, 518 2, 637 8, 506	1,000 pounds 22,029 17,433 2,404 7,855
New England	7, 301	4, 046	4, 018	Arkansas	2, 142	5, 205	5, 499
New York New Jersey Pennsylvania	47	9, 777 37 11, 086	14, 096 13 11, 615	Louisiana Oklahoma Texas	765 25, 282 25, 352	35, 156	1, 879 39, 280 36, 543
Middle Atlantic				W. South Central	53, 541	77, 194	83, 201
Ohio Indiana Illinois Michigan Wisconsin. E. North Central Minnesota Iowa Missouri North Dakota South Dakota South Dakota Kansas W. North Central Worth Central Missouri Medical Missouri Medical Med	79, 274 63, 357 64, 917 68, 051 159, 672 435, 271 279, 216 204, 668 74, 326 39, 337 38, 109 92, 059 58, 261	81, 140 75, 507 70, 433 78, 609 170, 399 476, 088 281, 659 219, 531 81, 702 49, 336 39, 700 85, 660 74, 587	83, 076 76, 508 68, 106 79, 637 157, 933 465, 260 299, 872 239, 125 86, 138 50, 799 43, 393 93, 361 81, 969	Wyoming Colorado New Mexico Idaho Arizona Utah Nevada Montain Washington Oregon California Pacific Total	31, 820 24, 451 73, 527 129, 798	21, 974 927 28, 559 2, 484 12, 638 1, 857 14, 182 84, 937 35, 612 29, 029 73, 322	23, 909 952 29, 420 1, 822 12, 754 1, 846 14, 795 87, 962 34, 146 27, 308 76, 194
Delaware	43 160 5, 762 364 2, 040 473 2, 378 148	56 61 6,060 440 2,805 924 2,638 316	55 784 5, 910 454 2, 878 948 3, 247 221				

¹ Includes whey butter.

Bureau of Agricultural Economics; the compilations are made from reports of factories to the Bureau.

Table 402.—Butter: Receipts, gross weight, at 5 markets, 1919-34

Year	New York	Chicago	Phila- delphia	Boston	San Fran- cisco	Year	New York	Chicago	Phila- delphia	Boston	San Fran- cisco
1919 1920 1921 1922 1923 1924 1925	1,000 pounds 226, 698 164, 608 213, 978 241, 604 243, 764 243, 754 244, 127 252, 742	1,000 pounds 185, 779 176, 746 193, 593 213, 101 225, 892 258, 083 254, 308 236, 546	1,000 pounds 51, 191 48, 630 58, 926 64, 551 68, 598 76, 731 72, 064 79, 345	1,000 pounds 73, 223 72, 993 74, 303 80, 473 82, 659 86, 921 82, 476 83, 243	1,000 pounds 19,663 24,412 25,264 27,778 25,520 26,260 28,680 27,666	1927 1928 1929 1930 1931 1932 1933 1934	1,000 pounds 261, 322 250, 593 265, 760 268, 070 274, 218 282, 520 290, 499 263, 256	1,000 pounds 235, 200 230, 514 244, 632 233, 638 243, 695 223, 428 261, 001 228, 241	1,000 pounds 81,727 84,495 87,386 83,762 90,585 92,243 92,387 88,947	1,000 pounds 84,617 87,324 81,183 72,455 77,200 81,984 88,275 90,535	1,000 pounds 26,709 24,032 25,155 24,738 26,692 28,750 29,017 27,585

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

Table 403.—Butter: Receipts, gross weight,1 at 5 markets, by months, 1932-34, and total, 1925-34

Market and year	Jε	an.	F	eb.	м	ar.	A	or.	м	ау	Ju	me	Ju	цЯ	Αι	ıg.	Se	pt.	0	et.	N	0 v.	D	ec.	То	tal
New York:	1 7	000 b. 243	1 1	b.	1 4	b. I	ι	b. 1		h. i	1 /	000 b. 237	1	h I	1 L	ъ	1	h 1	1 7	h	1 1	ħ	1	ъ 1	1 7	000 5.
1933 1934	25, 22,	238 696	21, 18,	009 711	23, 22,	328 960	21, 21,	215 109	27, 25,	824 838	29, 24,	189 407	26, 24,	896 609	27, 24,	328 058	20, 21,	892 025	23, 22,	173 555	22, 17,	111 510	22, 17,	246 778	290, 263,	520 449 256
Chicago: 1932 1933 1934	15.	779	15,	097	16.	821	116,	905	25.	017	31.	627	27.	308	26.	966	26.	888	21.	100	18.	979	18.	514	261	428 001 241
Philadelphia: 1932 1933 1934	8,	217 307 976	۱7,	151 680 760	8,	717	8,	061	9,	682	9,	322 584 507	7,	129	7,	773	6,	582	6.	063	6.	350	6.	934 459 212	92,	243 387 947
Boston: 1932 1933	6,	984 664 292	5,	947 860 523	6,	090 892 657	6, 7,		9,	020	9	952 388 150	8, 9,	543 293	7,		5, 6,		4,	880 041	5, 5,		5,	275 641 053	88	984 275 535
San Francisco: 1932 1933	2,	013 305 724	2, 1,	022	2, 2,	390 375 072	2,	995 955	3,	597 072	3	157 133 276	2,	628 871	2,	107 628 060	1, 2,		2,	019 936 065	1,		2 2	318 629 955	28 29	750 017 585
Total: 1925 1926	44,	825	41,	785	48.	351	50,	035	67,	454	88	024	82	918	68.	341	53.	303	51.	599	42.	099	42	993	681	727 480 575
1927 1928 1929 1930	50, 52.	. 095 . 490	47, 48.	797 557	54, 53.	300 979	52, 56.	158 881	63, 73,	. 582 . 879	81 81	, 318 . 180	75, 79.	901 442	64,	531 103	52, 51.	481 972	48, 50.	907 246	42, 44	796 739	43, 46.	. 092 . 648	676 704	958 116 663
1931 1932 1933	53, 56, 58,	, 340 , 775 , 293	50, 56, 51,	529 971 337	57, 58, 58,	011 214 133	62, 57, 55,	633 945 145	72, 75, 74,	275 553 617	86 83 83	, 676 , 229 , 921	68, 66, 73,	326 513 497	52, 60, 73,	659 407 306	50, 49, 63,	083 935 018	51, 46, 58,	242 129 313	52, 47, 55.	486 234 060	55, 50, 56,	130 020 489	712 708 761	390 925 129
1934	52,	607	46,	861	57,	926	54,	152	70,	551	73,	259	70,	273	66,	404	56,	664	57,	228	47,	708	44,	931	698	564

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

Table 404.—Creamery butter: Cold-storage holdings, United States, 1925-34

Year J	an. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1925	1,000 lb. 65, 694 52, 785 34, 347 46, 289 43, 783 81, 935 63, 401 26, 643 22, 043 11, 249	1,000 lb. 45,748 39,381 17,952 28,273 24,747 60,230 46,792 22,506 17,833 75,995	14, 404 11, 910 46, 530 30, 672 15, 243 11, 580	17, 392 3, 044 5, 716 5, 532 30, 556 18, 010 9, 094 9, 255	17, 527 3, 436 5, 109 5, 883 22, 957 17, 195 10, 394 9, 398	15, 952 28, 369 50, 378 35, 155 29, 160 35, 159	86, 897 89, 996 69, 750 91, 962 106, 522 89, 172 84, 269 106, 378	151, 621 145, 061 115, 121 110, 247 150, 934	138, 151 163, 701 136, 175 168, 952 143, 089 104, 678 107, 259 175, 476	125, 342 147, 396 128, 071 158, 541 131, 489 80, 152 89, 490	100, 871 118, 679 105, 811 138, 405 109, 646 56, 229 66, 828	64, 381 83, 224 70, 985 111, 650 88, 012 42, 242 37, 207 138, 166

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 462.

 $^{^{1}}$ Quantities given are net weights. 2 Amounts of butter purchased by the Federal Surplus Relief Corporation are included in these figures for year 1934.

Table 405.—Butter: Receipts, gross weight, at 5 markets, by State of origin, 1930-34

Market and origin	1930	1931	1932	1933	1934	Market and origin	1930	1931	1932	1933	1934
NEW YORK	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	1,000 lb.	PHILA.—con.	Ih I	1,000 lb.	1,000 lh.	1,000 lb.	1,000 lb.
Ala	159	110	67	1		Kans Ky Md Mich Minn	lb.	387	lb. 729	303	412
Ala Ark Calif Ga Ili Ind Iowa Kans Ky Md Mass Mich Minn Miss	153	224	26	129		Ку	111	365	520	778	937
Calif	82	48 120	33 181		193	Mich	72 1, 342	3, 029	3 335	143 174	258 91
Til	34 307	35, 186	20, 198	15, 778		Minn	52, 743	50, 864	56, 149	55, 563	48, 204
Ind	4, 799	5, 106	5, 494	5, 633	5, 482	Minn Miss Mo Nebr N. Y N. C Ohio Pa S. Dak	268	335	1, 366	280	69
Iowa	74, 630	74, 145	83, 428	83.752	79.305	Mo	1, 767	3, 115	3, 511	2, 975	2, 383
Kans	7, 512	7, 136 549	12, 066 933	15, 582 870	10,394	Nedr	2, 824 694	4, 083 859	4, 333 255	6, 292 122	7, 780 1, 277
Md	240	15	23	010	107	N. C	148	77	108	14	34
Mass	87	206	74		107	Ohio	1, 854	1, 261	1, 230	962	594
Mich	8, 802	12, 691	7, 317	7,666	5, 439	Pa	626	656	624)	356	323
Minn	65, 883	62, 081	75, 812	52,007	68, 284 476	S. Dak	215	401 973	736 1, 294	1,030	206 330
Miss Mo	623 4,345	795 5, 582	40 5, 856	572 5,850	5, 413		1, 967 222	842	1, 456	1, 272 1, 098	518
Mont	337	28		5	28	Tex	665	990	776	1,040	900
Nehr	26, 825	29, 877	33, 197	33,871	37, 235	W. Va	55	66	13	711	216
N. J	1	112	281	30		Wis	5, 395	4, 185	3, 210	3, 288 1, 349	4, 256
N. Y	7, 119 215	4, 837 55	2, 373 28	4, 757	5, 159	Other States	188	640 24	1, 451	1, 549	2, 180
N. J. N. Y. N. C. N. Dak	2, 514	5. 798	5, 767	4, 613	2,964						
Unio	6,925	5, 798 7, 155	5, 890	7, 576	6,849	Total	83, 762	90, 585	92, 243	92, 387	88, 947
Okla	771	1,417	2, 767 2, 047	1,928	898	200001					
Pa	1, 982 1, 151	1,850 984	1, 570	1, 426 2, 251	1,315 1,389	BOSTON					
Tenn	2, 465	1, 614	1,501	815	735	Colo	83	129		15	50
Tex	995	930	1,877	2, 318	1,246	III	12,065	13, 493	12, 535	12,460	13, 766
Va	244	273	221	354	633	Ind	2,842	2, 917	2, 951	2, 197	2, 308
Wash Wis	29 13, 917	26 14, 503		63 11, 692	105 8,909	Vone	4, 59 (70s	5, 1/5	12, 535 2, 951 3, 690 518	6, 896 802	2, 308 11, 778 1, 830
Other States.	201	165	128	369	497	Kv	222	47	104	125	1,030
Canada	47	600				Colo III III III III III III III III III	3	00	112	210	47
	000 070	074 010	000 500	000 110	000 000	Mich	993	1, 279 32, 719	1, 073	698	434
Total	208, 070	214, 218	282, 520	290, 449	203, 200	Mo	29, 119	2, 224	25, 627 3, 345	30, 917 4, 127	27, 492 4, 752
CHICAGO						Mont	2, 408 237	87		Z) 121	2,102
						Nebr	7,438	4,746	4, 756	4, 547	4, 576
Ark	118 780	229 242			1, 559 369	N. H	1 900	1, 954	483	542	
Colo Idaho	27	242	126 76	285	909	N Dak	1, 208 880	1, 863	7,716		164 7, 091
TII	1 12 204	20,061	19, 274	17, 846	16,882	Ohio	2,942	4, 267	3, 614	3, 297	3, 635
<u>Ind</u>	1, 217	1.375	3, 821	5, 620	4, 226 41, 231	Okla	540	964	1, 927	1,979	2,342
Iowa	39,606	42, 450	1 35. 898	1 46, 621	41, 231	Pa	81	250	45		26
Ind Iowa Kans Ky Mich Minn	9, 928 1, 353	15, 283 989	20, 271 397	25, 954 1, 321	20, 751 114	OklaPaS. DakTenn	1,911 119	2, 562 143	6, 667	5, 453	3, 909
Mich	576	877	1, 551	5.924		Tex	201	461	460	293	317
Minn	46, 380	39, 550	25, 534	5, 924 27, 362	24, 746	Vt	185	154	71	126	14
Miss Mo	140	290	352	441 18, 481	35 15, 871	Wis Other States_	3, 292 441	2, 885 192	5, 853 433	5, 242 170	5, 682 205
				60	180	Other Blaces.		182	400	170	200
Nebr	16, 225	15, 136	13, 918	18, 281		Total	72, 455	77, 200	81, 984	88, 275	90, 535
N. Y	107	28	9		17						
N. Dak	2,384	3, 053 607	1,720 128	2, 244 114	3, 134 84	SAN FRAN- CISCO	l				
Okla	3, 104	4, 507			4.023	CISCO	ļ				
W. 1/40	1 20, 200	1	10,666	15, 045	4, 023 11, 243	Calif	18, 110	18, 473	20, 510	20, 483	18, 287
Tenn	75	31	107	479	85	[] Colo) 93	144	159	400	590
Tex	1,483 68,047	2,920	4,079	5, 050	1, 238	Idaho	1, 223	1,515	965		463
WisOther States.	98	153	70	60, 227 257	62, 413 250	Nebr	2, 018	1, 424	1, 199 252	1, 107 61	1,021 641
						Nev	184	14	26	53	19
Total	233, 638	243, 695	223, 428	261, 001	228, 241	Mont Nebr Nev Oreg Utah	2,489		4, 712	4, 201	4,794
PHILADELPHIA						Wash	35 495	38 1,340	231 543	282 529	189 504
	1			1	l	Other States.	4	29	153	66	1,077
Ala	17	103			1 018]]	04 700	00.000	90 750	00 0:-	07 50-
III Ind	4, 652 1, 647	9, 166	4, 485 1, 412	2, 751 2, 208	4, 046 2, 760	Total	24, 738	26, 692	28,750	29, 017	27, 585
Iowa	6, 220	6,825	8.083	10, 318	11, 172	H	1				
	1	1 -,	1 .,	1	1	ll	i	f	l		l

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

Table 406.—Butter, 92-score creamery: Average wholesale price per pound, at 5 leading markets, 1925-34

Market and	year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
New York: 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934		Cents 39, 94 44, 88 49, 15 48, 76 47, 94 36, 63 28, 50 23, 59 19, 85 19, 84	44. 89 51. 55 46. 62 49. 89 35. 70 28. 40 22. 46 18. 65	47. 51 42. 82 50. 18 49. 44 48. 45 37. 27 28. 88 22. 61 18. 17	44. 54 39. 42 50. 35 45. 49 45. 35 38. 53 26. 10 20. 08	40. 84 43. 46 44. 93 43. 54 34. 85 23. 70 18. 84 22. 54	42. 49 41. 17 42. 52 44. 13 43. 54 32. 93 23. 33 16. 99 22. 84	40.50 41.72 44.93 42.42 35.31 24.95 18.18 24.53	43. 45 41. 79 41. 88 46. 94 43. 45 38. 92 28. 12 20. 31 21. 31	44. 62 46. 46 48. 75 46. 22 39. 77 32. 50 20. 76 23. 60	50. 88 46. 89 48. 39 47. 79 45. 56 39. 98 33. 76 20. 72 24. 04	50. 66 50. 58 49. 79 50. 57 42. 70 36. 09 30. 93 23. 30 23. 60	49. 20 54. 69 51. 87 50. 46 41. 10 32. 18 30. 55 24. 11 20. 08	44. 42 47. 28 47. 40 45. 01 36. 51 28. 31 21. 00 21. 66
Chicago: 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 San Francisco:		43. 01 48. 08 46. 83 46. 59 35. 10 27. 35 23. 02 18. 76	43. 09 50. 41 45. 62 49. 22 35. 30 27. 15 21. 63 17. 83	41. 53 49. 36 48. 14 47. 63 37. 25 28. 69 22. 05	38. 33 48. 13 43. 92 44. 14 37. 23 24. 37 18. 98 19. 78	39. 43 41. 49 43. 41 42. 06 33. 72 22. 37 17. 11 21. 76	39. 13 40. 42 42. 99 42. 38 32. 09 22. 30 16. 29 22. 36	38. 51 39. 98 43. 82 41. 31 34. 59 23. 85 17. 71 23. 87	40. 12 41. 45 45. 80 42. 50 37. 98 27. 19 19. 43	43. 09 45. 03 47. 08 44. 93 38. 16 30. 26 20. 03 22. 67	45. 93 46. 23 46. 45 43. 96 37. 75 32. 18 19. 79 23. 01	48. 90 48. 23 48. 86 41. 31 33. 70 29. 75 22. 10 22. 61	52. 54 50. 51 49. 10 39. 32 30. 51 29. 15 22. 67 18. 65	42. 80 45. 78 46. 00 43. 78 35. 28 27. 05 20. 07 20. 79
1927		46. 36 45. 87 36. 46 26. 19 24. 44	45. 20 47. 45 37. 64 28. 48 24. 00 18. 82	43. 41 44. 56 37. 69 48. 23 22. 87 19. 31	39. 88 43. 13 38. 75 24. 35 20. 00 20. 60	41. 70 45. 02 36. 80 25. 34 19. 48 22. 92	42.98 44.82 34.00 25.00 17.92 23.00	33. 94 33. 94 26. 17 218. 88 24. 00	47. 59 46. 11 37. 21 29. 63 20. 74	50. 26 48. 65 38. 96 30. 54 21. 00 20. 58	50. 92 48. 29 37. 12 31. 88 21. 88 20. 84	49. 20 48. 00 34. 11 32. 00 25. 65 22. 22	49. 74 41. 68 33. 06 29. 70 26. 85 19, 58	46. 08 45. 71 36. 31 28. 13 21. 98 21. 11
1925		45. 50 50. 04 49. 74 48. 69 37. 66	45. 30 52. 09 47. 59 50. 51 36. 48 29. 40 23. 43 19. 65	43. 10 51. 13 50. 36 49. 22 38. 10 29. 88 23. 63 19. 09	40. 19 51. 29 46. 48 46. 34 39. 53 27. 09 21. 05 21. 62	41. 78 44. 29 45. 93 44. 54 35. 83 24. 70 19. 84 23. 51	42. 08 43. 21 45. 18 44. 58 33. 94 24. 33 17. 98 23. 59	41. 35 42. 64 3 45. 94 5 43. 45 4 36. 35 19. 18 9 25. 56	42. 75 42. 91 48. 05 2 44. 45 2 39. 92 3 29. 11 3 21. 31 22. 26	45. 62 47. 46 6 49. 75 6 47. 22 2 40. 78 2 33. 50 21. 77 24. 60	47. 88 49. 39 48. 73 46. 56 40. 96 34. 76 21. 73 25. 04	51. 54 50. 72 51. 55 43. 78 37. 11 31. 93 24. 30 24. 40	55. 68 52. 87 51. 47 42. 10 33. 17 31. 58 25. 11 20. 85	45. 23 48. 17 48. 39 45. 95 37. 49 29. 31 22. 00 22. 59
Boston: 1925 1926 1927 1928 1929 1930 1931 1931 1933 1934		45. 25 49. 53 48. 62 47. 87 37. 08 29. 10 24. 41	45. 38 51. 86 2 46. 93 49. 98 36. 48 28. 91 23. 33 19. 28	43. 26 50. 95 49. 62 48. 85 37. 82 29. 38 23. 19 19. 13	39. 96 51. 08 46. 00 46. 22 39. 04 26. 73 20. 65 21. 50	41. 10 43. 70 45. 38 2 44. 03 4 35. 42 3 19. 14 0 23. 28	41.56 52.62 3 44.47 2 44.06 2 33.38 2 23.78 5 17.64	3 40. 86 41. 86 45. 35 3 42. 77 3 35. 75 4 19. 05 3 25. 54	41. 85 42. 06 2 47. 15 43. 98 3 39. 38 2 20. 75 4 22. 25	7 44.72 3 46.24 2 48.73 3 46.47 3 39.94 7 32.50 7 21.25 7 24.06	46. 54 47. 80 47. 96 45. 69 39. 96 34. 15 21. 21 24, 88	48. 38 48. 02 50. 15 42. 85 36. 17 31. 41	53. 69 49. 84 50. 24 41. 36 32. 56 31. 00 24. 71 20. 91	44.39 47.13 47.54 45.34 36.91 28.77 21.59 22.47

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the markets. These wholesale prices are based on open-market sales for each or short-time credit, consideration being given to the prices at which the larger quantities are sold. New York data for earlier years in 1930 Yearbook, table 461.

Table 407.—Butter, creamery: Average wholesale 1 price per pound, all scores, by months, New York and Chicago, 1934

NEW YORK

	00	92	91	90	89	88	87	Centr	alizer ca	r-lots
Month	93	92	ar	30	00			90	89	88
January February March	20.59 26.10 26.09	19.84 25.35 25.35	19. 60 25. 05 25. 07	19. 49 24. 77 24. 89	19.12 24.39 24.44	18. 73 23. 71	18. 21 22. 77	19. 49 24. 77 24. 89	19. 12 24. 39 24. 44	18.72 23.71
April	25. 23 25. 64	23. 66 24. 49 24. 87 24. 49 27. 38 25. 78 26. 93 29. 36	23. 42 24. 10 24. 63 24. 14 26. 90 25. 40 26. 52 28. 89	23. 33 23. 68 24. 27 23. 81 26. 27 25. 05 25. 82 28. 10	23. 02 23. 31 23. 77 23. 25 25. 30 24. 50 25. 02 27. 39	22. 58 23. 39 22. 86 24. 55 24. 00 24. 57 26. 86	21. 94 22. 99 22. 42 24. 05 23. 59 24. 18 26. 36	23. 33 23. 69 24. 27 23. 81 26. 28 25. 04 25. 81 28. 10	23. 02 23. 31 23. 77 23. 25 25. 30 24. 50 25. 02 27. 39	24. 64 24. 00 24. 57 26. 86
DecemberAverage	31. 70 26. 46	30. 94 25. 70	30. 48 25. 35	29. 54	28.48	27.80	27.33	29. 54	28. 48	27.80
				OHICA	GO.					
January February March April May June July August September October November December	25. 14 23. 10 23. 97 24. 97 24. 38 27. 11 25. 52 26. 66 29. 75 30. 25	19. 36 24. 35 24. 52 22. 40 23. 22 24. 22 23. 63 26. 34 24. 82 25. 91 29. 50	18. 96 23. 97 24. 18 22. 14 22. 80 23. 61 22. 86 25. 44 24. 32 25. 65 28. 73 28. 95	18. 69 23. 50 23. 81 21. 96 22. 51 23. 17 22. 55 25. 04 24. 02 25. 05 27. 23 28. 03	18. 34 23. 03 23. 35 21. 67 22. 18 22. 60 22. 91 24. 33 23. 64 24. 24 26. 24 27. 30	17. 96 22. 52 22. 72 21. 36 21. 74 22. 11 21. 30 23. 53 23. 10 23. 46 25. 45 26. 40	17. 27 21. 68 22. 01 20. 80 21. 10 21. 40 20. 50 22. 68 22. 53 22. 75 24. 72 25. 60	19. 12 24. 09 24. 42 22. 33 23. 15 24. 14 23. 71 26. 08 24. 69 25. 42 27. 36 28. 41	18. 62 23. 24 23. 58 21. 78 22. 37 23. 08 22. 34 24. 76 23. 74 24. 34 26. 35 27. 38	17. 90 22. 24 22. 67 21. 35 21. 79 22. 26 21. 44 23. 69 23. 10 23. 46 25. 44
Average	25.49	24.77	24.30	23.80	23. 24	22.64	21.92	24.41	23. 46	22.65

¹Principally sales by first-hand receivers to jobbers, chain stores, or other large distributors, in less than carload lots, except as otherwise indicated.

Bureau of Agricultural Economics.

Table 408.—Butter: Average export price per pound in Copenhagen, Denmark, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934	Cents 42. 0 36. 5 36. 4 35. 4 39. 1 34. 8 26. 4 16. 7 12. 2 14. 3	Cents 45. 4 40. 2 39. 3 37. 5 39. 0 35. 3 29. 5 19. 8 12. 3 14. 8	Cents 46.1 38.8 36.8 40.0 35.5 31.7 27.0 16.3 11.0 15.0	Cents 38. 9 36. 2 35. 2 36. 8 32. 8 27. 4 24. 3 15. 6 10. 8 13. 0	Cents 36. 9 34. 8 32. 9 35. 4 26. 3 23. 3 13. 6 11. 9 13. 6	Cents 39. 4 35. 7 33. 2 34. 9 34. 9 27. 3 13. 2 12. 2 13. 7	Cents 40.5 35.4 32.2 36.4 35.3 30.3 23.2 14.8 14.8	Cents 44, 2 36, 1 35, 0 38, 0 35, 6 29, 2 24, 5 14, 0 16, 2 18, 2	Cents 45.7 36.6 39.6 40.2 39.7 29.9 24.2 15.7 19.0 18.2	Cents 46. 5 36. 3 39. 4 39. 5 40. 5 30. 1 21. 2 14. 7 18. 1	Cents 44.6 34.9 41.2 40.6 38.7 27.2 19.6 14.5 21.0 21.1	Cents 37.8 37.1 38.0 42.4 35.8 27.3 18.8 13.7 19.1	Cents 42. 5 36. 6 36. 6 38. 1 36. 7 29. 8 23. 8 15. 2 14. 4

Bureau of Agricultural Economics. Compiled from Danish Butter Journal (Smor Tidende) official quotations in kroner per 100 kilograms, as fixed each Thursday by 2 committees, representing dairy and commercial interests respectively. For years 1882-1924, see the 1923 Yearbook, table 467. Converted at monthly average rates of exchange as given in Federal Reserve Bulletin, except for period January 1927-August 1931, when par of exchange was used.

Table 409.—Butter: International trade, average 1925-29, annual 1930-33

					Caler	ıdar year				
Country	Ave: 1925	rage -29	193	0	19	31	19	82	1	933 1
	Ex- ports	Im- ports	Exports	Im- ports	Exports	Imports	Exports	Imports	Ex- ports	Imports
PRINCIPAL EXPORTING COUNTRIES Denmark New Zealand Australia 2 Netherlands Russia Argentina Irish Free State Sweden Finland Latvia Estonia Poland France Italy Yugoslavia	156, 179 100, 464 100, 310 62, 901 50, 410 58, 409 37, 607 31, 509 24, 641 21, 439 17, 426	1,000 pounds 1,886 6 3,448 4,548 4,548 4,548 29 6,215 350 6,600 1,600	372, 553 211, 035 126, 598 92, 393 23, 197 51, 156 58, 766 58, 805 37, 726 40, 630 31, 010 26, 713 10, 722 1, 851	1,000 pounds 1, 388 4, 396 7 3, 342 19 8 49 0 12, 922 3, 130	68, 023 51, 167 42, 307 43, 045 38, 367 41, 311 31, 844 27, 470 9, 765 1, 283	0 24 0 32 40, 837 6, 203	244, 781 229, 055 44, 922 68, 197 55, 915 36, 931 29, 866 32, 020 41, 001 27, 626 2, 707 7, 024 827	923 1 9, 321 9, 321 0 6 2, 632 0 1 0 866 26, 140 4, 398	30, 659 45, 232 37, 758 26, 201 34, 494 20, 336 3, 547 6, 829 834	783 0 1, 449 0 2 222 73
Y ugosiavia Total		24,872	655 1, 143, 810	25, 297	1, 220, 066		339 1, 169, 093		318 978, 194	
PRINCIPAL IMPORTING COUNTRIES United Kingdom Germany	1, 465	647, 350 249, 016	1, 115	744, 623 293, 557	869	863, 365	1, 238	902, 601	1, 328	979, 867
Switzerland Canada Netherlands Indies United States Belgium Austria Union of South	155 8, 510 0 4, 558	18, 070 14, 638 9, 758 6, 227 5, 856	40 1, 180 0 2, 954 2, 647	18, 795 38, 606 10, 910 2, 472	17, 680 10, 680 1, 984 2, 756	23, 359 2, 821 11, 787 1, 882 41, 585	3, 506 0 1, 605 1, 841	8, 152 238 11, 711 1, 014 46, 928	4, 437 0 1, 191 725	1, 146 1, 377 3 10, 051 1, 022 27, 352
Africa	53 48 421 187 5	2, 341 2, 085 1, 846 1, 811 1, 780 1, 708	23 81 236 193 38	2, 935 3, 432 1, 529 2, 067 448 623	73 1, 629 104 110	2, 521 4, 635 381 1, 863 207 270	389 ² 36 2, 429 108 41	1, 545 2 3, 939 91 1, 621 58 211	904 118	1,816 146 1,585
China GreecePhilippine Islands Czechoslovakia Trinidad and To- bago	605	1, 661 1, 251 1, 200 1, 174	0 3 0 0 694	1, 420 1, 188 716	661	2, 060 1, 758 4, 107	27 27	1, 198 1, 336 2, 704	110	604 1, 495
Spain Total	328		160		88		4.5		21	1, 162, 430

Bureau of Agricultural Economics; official sources except where otherwise noted.

Butter includes all butter made from milk, mrited and renovated butter, but does not include margarine or oleomargarine, cocoa butter, or ghee.

Preliminary.
 International Yearbook of Agricultural Statistics.
 Java and Madura only.
 Does not include Manchuria after June 30, 1932.

Table 410.—Cheese, whole-milk American Cheddar: Production in factories, United States, 1924-33

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1924 1925 1926 1927 1928 1929 1930 1931 1932 1933	16, 834 19, 519 16, 660 18, 010 19, 925	21, 993	21, 598 25, 216 21, 318 23, 451 24, 059 28, 502 27, 571 25, 484	26, 889 29, 221 24, 533 28, 221 30, 181 34, 143 32, 940 29, 706	38, 012 38, 598 34, 704 37, 324 42, 483 48, 545 44, 439 41, 933	45, 782 46, 320 41, 489 45, 012 51, 702 53, 887 49, 513 48, 534	43, 706 40, 164 38, 195 40, 072 48, 007 45, 582 40, 595 40, 205	37, 659 33, 239 31, 944 34, 229 37, 811 33, 555 32, 956 34, 796	31, 548 28, 809 25, 783 30, 342 30, 824 26, 705 29, 139 31, 510	28, 253 23, 164 23, 012 25, 134 25, 961 23, 581 30, 470 29, 267	20, 349 16, 386 16, 717 18, 013 19, 655 18, 781 23, 016 23, 601	18, 619 15, 295 16, 337 16, 440 20, 184 18, 838 20, 050 22, 819	347, 240 335, 915 307, 777 335, 253

Bureau of Agricultural Economics. Compiled from reports of factories made direct to the Bureau. Figures beginning with the year 1929 are the most complete since these reports were inaugurated in 1918. Some allowance, therefore, should be made for this when comparing production since 1929 with that of previous years. Data for earlier years in 1928 Yearbook, table 468.

Table 411.—Cheese, whole-milk American Cheddar: Production in factories, by States, average 1927-31, annual 1932 and 1933

		-					
State	Aver- age, 1927-31	1932	1933	State	Aver- age, 1927–31	1932	1933
Vermont	1,000 lb. 709 97	1,000 lb. 132 76		South Atlantic	1,000 lb. 753		
New England	806	208	446	TennesseeOthers	1, 626 4, 761	2, 386 8, 523	
New YorkNew Jersey	27, 519 61	22, 586	26, 286	East South Central	6, 387	10, 909	13, 632
Pennsylvania	1, 732	1, 301	1,828	West South Central	2, 986	11, 363	15, 615
Middle Atlantic Ohio	902	1, 355 14, 417 8, 529		Wyoming Idaho Utah Montana Others	2, 120 7, 127 2, 716 1, 765 2, 566	6, 087 3, 156 1, 886	5, 106 4, 493 1, 990
Wisconsin			238, 692	Mountain	16, 294	14,814	15, 242
East North Central Minnesota Lowa Missouri	9, 043 803 2, 779	7, 578 1, 016 3, 551	1,383 4,584	Washington Oregon California Pacific	4, 332 13, 114 4, 653 22, 099	15, 532 8, 130	15, 251
Others	5, 457 18, 082		I	Total			408, 631

Bureau of Agricultural Economics. The compilations are made from reports of factories to the Bureau.

TABLE 412.—Cheese: Receipts, gross weight, at 5 markets, 1919-84

Year	New York	Chicago	Phila- delphia	Boston	San Fran- cisco	Year	New York	Chicago	Phila- delphia	Boston	San Fran- cisco
1919 1920 1921 1922 1923 1924 1925	1,000 lb. 65,045 47,004 51,981 50,109 49,425 42,959 46,163 45,363	1,000 lb. 81, 019 81, 597 85, 849 107, 724 123, 645 130, 024 131, 129 115, 104	1,000 lb. 21, 392 16, 866 20, 952 19, 324 18, 363 16, 866 19, 095 19, 454	1,000 lb. 17, 722 12, 997 13, 208 13, 521 15, 914 13, 725 15, 314 15, 437	1,000 lb. 12,089 10,203 9,632 9,157 11,690 11,482 11,855 12,530	1927 1928 1929 1930 1931 1932 1933	1,000 lb. 46, 937 48, 272 50, 911 52, 165 56, 005 61, 195 59, 850 69, 293	1,000 lb. 123, 633 97, 264 80, 823 58, 866 41, 555 42, 804 36, 889 32, 880	1,000 lb. 20,396 21,039 19,973 21,167 20,949 22,081 23,280 24,815	1,000 lb. 14,588 17,362 14,899 16,882 17,240 16,593 17,680 19,422	1,000 lb. 12, 694 12, 676 12, 293 15, 119 12, 907 14, 349 14, 506 13, 648

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets.

Table 413.—Cheese: Receipts, gross weight, at 5 markets, by months, 1932-34, and total, 1925-34

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
New York: 1932 1933 1934	1,000 lb. 4,996 4,338 6,426	lb. 5, 158 4, 106	5,041	lb. 3, 945 4, 904	6,509	lb. 5,702 5,209	1b. 6,590 6,589	4, 728	4,760	5,027	1,000 lb. 4,902 4,088 6,353	4,551	1,000 lb. 61,195 59,850 69,293
Chicago: 1932 1933 1934 Philadelphia:	3, 177 2, 959 2, 816	2, 663	3, 222	3, 235	3,603	3, 818	3, 483	2, 985	2,611	2,949	2,623	2, 738	36, 889
1932 1933 1934 Boston:	1, 434 1, 566 2, 184	1, 518	2, 250	2, 267	2, 221 2, 840 2, 588	2,009		1,909	1, 969 1, 728 2, 006	1,974	1,729	1, 282	23, 280
1932 1933 1934 San Francisco:	1,045 1,097 1,563	978		1, 113	1, 425	1,633	2, 354	1, 392	1, 495 1, 892 1, 407	1,706	1,558	1, 229	17,680
1932 1933 1934	710 808 799	720	906	1, 210	1,659	1,320	2, 289	1,642	1,046 1,180 1,136	1,053	773	946	14, 506
1925 1926 1927	14, 853 12, 707	13, 568 14, 916	3 15, 055 3 14, 956	15, 531 16, 922	14, 972 21, 301	21, 777 22, 134	21, 973 24, 134	20, 736 22, 556	18, 784 21, 522	18, 699 18, 996	15, 954 14, 278	15, 986 13, 826	223, 556 207, 888 218, 248
1928 1929 1930 1931 1932	13, 781 12, 526 11, 600	13, 87 12, 466 10, 40	7 12, 261 3 12, 904 3 11, 717	12, 331 13, 026 11, 445	16, 750 15, 473 12, 145	18, 406 17, 895 17, 480	20, 548 17, 435 14, 190	18, 605 14, 953 14, 264	15, 289 14, 510 11, 948	14, 343 12, 225 13, 588	11, 829 10, 783 10, 569	10, 879 10, 003 9, 304	196, 613 178, 899 164, 199 148, 656 157, 022
1932 1933 1934	10, 768	9, 98	2 12, 725	12, 729	16, 036	13, 989	16, 923	12, 656	12, 171	12, 709	10, 771	10, 746	152, 205 160, 058

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various See 1927 Yearbook, table 443; 1931 Yearbook, table 474, and 1934 Yearbook, table 411, for data for earlier vears.

Table 414.—Cheese, American, and all varieties: Cold-storage holdings. United States, 1925-34

AMERICAN 2

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1925	1,000 lb. 49,187 58,457 56,758 49,914 71,177 68,930 67,599 60,804 57,749 77,773	50, 339 48, 106 43, 837 60, 772 58, 972 58, 516 54, 360 53, 532	42, 587 41, 383 38, 189 52, 665 53, 208 52, 304 47, 106 46, 992	38, 041 37, 188 33, 294 48, 175 46, 507 45, 277 42, 009 41, 625	35, 597 34, 332 32, 177 44, 983 43, 239 44, 792 38, 951	39, 346 37, 710 39, 203 50, 721 53, 403 46, 764 40, 461 41, 336	54, 069 52, 085 56, 386 66, 640 74, 986 63, 156 53, 922 67, 456	73, 681 69, 119 75, 862 83, 914 93, 773 73, 693 63, 667 82, 771	81, 297 71, 825 86, 632 90, 863 92, 063 73, 740 66, 721 94, 394	77, 646 67, 402 84, 745 89, 797 90, 152 70, 940 68, 555 99, 326	72, 491 60, 766 85, 126 83, 737 83, 674 69, 611 66, 813	63, 881 55, 140 77, 258 76, 669 75, 736 66, 053 62, 392 85, 146

ALL VARIETIES

1925	67, 558	58, 461	50, 117	40, 480	39, 037	42, 888	61, 992	83, 568	95. 472	97, 777	90, 866	84, 561
1926	76, 649	67, 531	58, 175	51, 285	47, 450	52, 167	68, 771	90, 053	98, 473	95, 385	89, 785	81,084
1927						52, 748						
1928	66, 184	57, 906	50, 263	44, 710	43, 761	51, 477	71, 353	92, 482	104, 224	101, 251	100, 229	92, 903
1930	88, 832	77, 024	67 991	50,022	56,009	64, 177 72, 358	05 991	112,077	110, 314	107, 881	101 140	92, 553
1931	83, 288	73, 488	66, 177	57, 711	57, 422	60, 242	77, 989	89, 264	91, 284	88, 564	87, 386	84, 035
1932	78.318	70, 682	60. 962	54, 021	50.764	52, 118	66, 531	76, 327	79.847	81, 406	78, 274	73, 916
1933	68, 714	63, 321	55, 731	48, 806	43, 626	48, 481	78, 715	94, 291	108, 035	113, 131	109, 655	99,009
1934	91,970	78, 789	67, 819	62, 153	65, 450	71, 469	96, 960	115, 842	122, 495	127, 363	118, 008	109, 972

¹ Quantites given are net weight.
² The term "American cheese" is intended to cover only those varieties known as "twins," "flats," "daisies," "Cheddars," "longhorns," and "square prints." It does not, therefore, include all kinds of cheese made in the United States.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Changes in these tables made due to transference of current trading stocks to cold-storage stocks from Jan. 1, 1927, to Dec. 1, 1931. Data for earlier years in 1923 Yearbook, table 472.

Table 415.—Cheese: Receipts, gross weight,1 at 5 markets, by State of origin. 1930-34

						- /					
Market and origin	1930	1931	1932	1933	1934	Market and origin	1930	1931	1932	1933	1934
NEW YORK III. Ind. Iowa. Mass. Mich. Minn. Mo Nebr. N. J.	1, 084 84 93 844 329 13 45	1,000 lb. 7,288 1,539 26 68 704 266 30 115	1,000 lb. 9,196 1,074 122 22 1,377 285 94 63	1,000 lb. 10,957 770 85 22 1,366 1,100 132 78	1,000 lb. 13,365 1,788 103 15 1,129 488 215 1	PHILADEL- PHIA—con. Wis Other States Canada Total CHICAGO	60	1,000 lb. 15,945 237 20,949		2	1,000 lb. 20,794 24,815
N. Y Ohio Pa Vt. Va Wis Other states Canada	10, 866 617 466 43 1 28, 835 204 2, 427	8, 294 576 146 (2) (2) (2) 35, 456 78 1, 411	7, 289 592 100 6 (2) 40, 657 87 228	5, 782 466 92 43 184 37, 806 443 509	5, 313 269 34 479 45, 305 487 299	Calif	1,853 396 98 39 246 1,751 24	45 12 943 139 76 27 49 1,132 20		2 23 3,658 100 61 40 92 1,351	3 69 4,510 277 4 10 27 343
Total BOSTON IIIInd MaineMass Mich	1,387 382 (²) 38	1, 404 348 (²) 25 396	784 216 1 2 273	691 40 (2) (3) 352	1, 031 106 142	Mont	319 2,857 136 60 16 5 49,447	1 879 1,323 9 23 28 59 36,424 333	156 3, 203 46 55 19 31 33, 796 326	82 2,571 51 22 76 3 28,267 248	228 2, 589 79 74 1 24, 353
N. H	2,349 12 60 113 9,492	2, 310 76 1 54	12 2, 226 33 2 53	3, 024 11 	2,737 19 55 50 14,997 260	Other States Canada Total SAN FRAN- CISCO	867	33		131	251 62 32, 880
Total PHILADEL- PHIA	16,882					Calif Colo Idaho III Mont	3,413 221	3, 110 129 2, 907 (2)	1,781 33	3, 489 115 2, 203 71 (2)	4, 068 156 1, 929 109
IllIndIowaMichMinnN. Y	34 4 655 34 2,231	1,880 146 3 668 285 1,688	2, 512 4 5 75 799 979	2, 462 1 6 777 936 974	2,770 47 24 350 435 335	N. Y Oreg Utah Wash Wis Other States	784 5, 427 28 13 759	5,093 34 904 43		400 5, 524 38 69 2, 542 55	404 4, 858 278 1, 799 42
N. Dak Ohio Pa		10 87	66 51	22 22	49 11	Total	15, 119	12, 907	14, 349	14, 506	13, 648

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various

Table 416.—Cheese, No. 1 American, fresh single daisies: Average wholesale price per pound, New York, by months, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925. 1926. 1927. 1928. 1929. 1980. 1981. 1932. 1933.	24 26 26 26 25 21 17 13 12 13	Cents 24 25 26 1 25 24 21 16 13 11	Cents 24 23 25 25 24 21 16 13 11	Cents 24 21 24 24 24 21 15 12 12	Cents 24 21 24 24 23 20 14 12 15 14	Cents 24 21 24 26 23 18 14 11 15	Cents 24 22 24 26 23 18 15 12 15 13	Cents 24 22 25 26 23 19 16 14 14 15	Cents 24 23 27 27 24 20 17 14 13	Cents 25 24 28 26 24 19 16 13 13	Cents 1 25 25 27 25 24 19 15 13 13	Cents 25 26. 29 25 23 18 14 13 12 15	Cents 24 23 26 25 24 20 15 13 13

¹Less than 10 quotations during month.

*Based on 11 months' quotations.

² Not over 500 pounds.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the market. These wholesale prices are based upon open market sales made for each or short-time credit, consideration being given to the prices at which the larger quantities are sold.

Table 417.—Cheese: International trade, average 1925-29, annual 1930-33

			······································		Calend	ar year				
Country	Averag	e 1925-29	19	30	19	931	19	32	193	33 1
	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im- ports	Ex- ports	Im ports	Ex- ports	Im- ports
PRINCIPAL EXPORT- ING COUNTRIES Netherlands	171, 975 120, 606 76, 435 64, 236 14, 740 7, 843 6, 724 5, 951 4, 787 2, 150 1, 870 21, 390	1,000 pounds 1, 292 4 3,419 9,818 3,538 972 2,450 1,212 42 318 11,720 2110 24,913	1,000 pounds 203,054 80,164 80,973 66,143 12,626 8,274 7,263 4,682 4,583 2,466 1,846 697 679,506	1,000 pounds 1,509 7 1,788 12,562 4,238 808 2,961 154 35 297 5 955 0	1,000 pounds 190, 457 183, 271 84, 788 88, 947 54, 305 9, 383 10, 980 7, 412 5, 777 4, 197 3, 141 920 110 643, 688	1, 446 10, 115 8, 470 603 3, 781 24 243 243 5 496 0	1,000 pounds 170, 059 200, 528 86, 940 66, 397 43, 700 14, 535 6, 123 8, 616 2, 601 693 123 610, 341	1,000 pounds 1,075 2 1,167 8,806 4,756 129 3,071 60 26 150 4 65 0	1,000 pounds 140,899 222,090 74,169 52,561 45,347 22,219 2,824 -9,207 3,229 2,579 482 62 575,668	1,000 pounds 808 9,952 3,779 78 2,917
PRINCIPAL IMPORTING COUNTRIES United Kingdom Germany United States Belgium France Algeria Spain Austria Egypt Cuba Greece Argentina Irish Free State Notherlands Indies Mexico Brazil Sweden Tunis British India Norway Union of South Africa	3, 311 4, 350 1, 173 31, 257 220 89 1, 769 152 5 40 861 271 0 126 0 474	331, 101 149, 2680 38, 709 37, 496 7, 1056 6, 870 4, 567 1, 881 1, 472 1, 347 1, 347 1, 191	5, 579 5, 411 1, 964 875 32, 694 218 207 4, 494 100 201 744 169 0 556 0 550 28 7 1, 380 1, 954	345, 227 137, 458 68, 311 55, 036 10, 463 10, 463 7, 494 2, 867 2, 867 2, 161 1, 236 1, 473 1, 764 1, 1764 1, 1764 1, 1764	4, 047 7, 372 1, 673 813 28, 824 194 297 6, 233 129 7 2 185 1, 055 174 0 0 23 1 100 24 6 2, 905 2, 186	319, 916 120, 403 61, 991 49, 590 69, 560 11, 346 5, 7315 1, 378 3, 659 2, 689 2, 689 2, 689 1, 943 899 562 303	4, 011 4, 237 1, 408 24, 554 25, 554 261 239 3, 981 298 5 2 619 1, 470 0 0 258 14 4, 644 2, 364	333, 118 108, 686 55, 623 45, 779 43, 904 11, 103 5, 247 744 1, 744 1, 770 2, 2047 487 3, 703 1, 044 2, 070 969 240 379	3, 482 3, 875 1, 281 349 25, 034 169 4, 735 125 	387, 779 90, 922 48, 387 48, 386 46, 10, 775 2, 499 6, 172 731 334 3 1, 736 2, 730 1, 036 2, 730 1, 036 1,
Total	49, 901	685, 902	56, 762	709, 025	56, 194	668, 231	47,832	2, 437	47, 116	602, 612

Bureau of Agricultural Economics; official sources except where otherwise noted. All cheese made from milk, including "cottage cheese".

Table 418.—Oleomargarine: Production and apparent consumption in the United States, 1924–25 to 1933–34

	1	Production		Stocks begin-	77	Stocks	Apparent con- sumption		
Year beginning July	Colored	Uncol- ored	Total	ning of year	Exports	end of year	Total	Per capita	
1924-25 1925-26 1926-27 1928-29 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34	1,000 pounds 11, 280 13, 181 14, 502 15, 351 16, 306 17, 103 8, 847 4, 636 2, 813 2, 689	1,000 pounds 204, 123 234, 866 242, 655 279, 348 316, 816 332, 021 268, 926 210, 706 216, 230 240, 498	1,000 pounds 215, 403 248, 047 257, 157 294, 689 333, 122 349, 124 277, 773 215, 342 219, 043 243, 187	1,000 pounds 2,607 2,720 2,942 3,299 3,187 4,191 4,694 2,494 2,615 2,786	1,000 pounds 887 1,256 942 782 633 931 604 553 316 537	1,000 pounds 2,720 2,942 3,299 3,187 4,191 4,694 2,494 2,615 2,786 2,782	1,000 pounds 214, 403 246, 559 255, 858 294, 079 331, 485 347, 690 279, 369 214, 688 218, 556 242, 704	Pounds 1.87 2.12 2.17 2.46 2.74 2.84 2.26 1.72 1.75 1.98	

Bureau of Agricultural Economics. Production and stocks from reports of the Bureau of Internal Revenue. Exports from reports of the Bureau of Foreign and Domestic Commerce. See 1927 Yearbook, table 448, for data for earlier years.

Preliminary.
 International Yearbook of Agricultural Statistics.
 Java and Madura only.

Table 419.—Oleomargarine: Materials used in manufacture, 1924-25 to 1933-34

		Year beginning July											
Material	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930–31	1931–32	1932-33	1933-34			
Butter	1,000 pounds 1,509 79,449 38 196 20,966 61,924 25,674 44,102 5,250 3,183 4,392 18,725	1,000 pounds 2,330 98,307 41 174 25,603 72,662 25,172 47,418 3,082 5,257 20,593 1 1,501	1,000 pounds 2,070 107,654 18 183 28,372 73,700 24,872 5,145 2,552 4,872 21,683 1,190	1,000 pounds 2,484 141,000 19 38 24,801 83,115 25,036 45,477 5,532 1,738 5,459 25,024	1,000 pounds 2,611 171,412 47 28,173 94,752 24,189 47,185 5,834 1,294 6,617 27,311 1,512	1,000 pounds 2,616 185,066 21 (1) 30,214 97,753 19,682 45,322 6,269 1,189 5,714 28,890 1,343	1,000 pounds 1, 013 155, 954 11 159 22, 037 77, 251 10, 180 28, 040 5, 485 1, 025 5, 291 22, 981 2, 262 3, 202	1,000 pounds 39 127, 967 5 74 14, 874 54, 257 10, 557 15, 315 4, 337 641 3, 780 14, 659 13 847	1,000 pounds 16 134, 430 3 102 16, 031 52, 007 9, 130 12, 457 3, 283 573 2, 338 12, 598 12, 598 861	1,000 pounds 10 140,083 3 274 24,338 57,794 9,240 17,984 3,301 332 2,641 14,187			
Total	266, 234	307, 460	316, 085	361, 069	410, 937	424, 648	334, 891	247, 365	243, 836	271, 829			

¹ Not over 500 pounds.

Bureau of Agricultural Economics; compiled from annual reports of the Bureau of Internal Revenue.

Table 420.—Oleomargarine, standard, uncolored: Average wholesale price 1 per pound, Chicago, by months, 1925-34

Year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
1925 1928 1927 1928 1929 1930 1931 1932 1932 1933	Cents 24. 5 24. 5 21. 5 23. 5 23. 5 17. 7 12. 8 9. 5 7. 0	Cents 24. 5 24. 3 21. 5 23. 5 23. 5 15. 5 9. 8 8. 0 7. 0	Cents 24.5 23.5 21.5 23.5 23.5 24.5 9.5 7.7 8.0	Cents 24.5 23.3 21.5 23.5 23.5 14.5 9.5 8.1 7.3	Cents 23.9 22.5 21.5 23.5 23.5 12.8 9.5 9.4 7.0	Cents 23.5 22.5 21.5 23.5 23.5 22.8 11.0 9.5 7.8	Cents 23.7 22.5 21.5 21.5 23.5 20.5 10.6 9.1 9.5 8.0	Cents 24. 5 22. 5 21. 5 21. 5 23. 5 20. 5 10. 5 9. 3 9. 5 8. 0	Cents 24.5 22.5 23.9 22.0 23.5 20.5 11.9 9.5 9.0	Cents 24. 5 22. 5 24. 5 23. 5 23. 5 20. 5 12. 7 9. 5 9. 8	Cents 24. 5 21. 8 23. 5 23. 5 23. 5 13. 3 9. 5 7. 8 10. 0	Cents 24.5 21.5 23.5 23.5 19.0 13.4 9.5 7.0 10.4	Cents 24. 3 22. 8 22. 5 23. 5 21. 8 13. 3 9. 7 8. 7 8. 3

¹ These prices are for consignment to the wholesale trade.

Bureau of Agricultural Economics; compiled from Bureau of Labor Statistics Wholesale Price Bulletins. Data for earlier years in 1928 Yearbook, table 477.

Table 421.—Chickens: Number on hand Jan. 1 and value, United States, 1925-35

Year	Number	Value per head	Total value	Year	Number	Value per head	Total value
1925 1	Thousands 409, 291 417, 755 424, 514 450, 585 467, 174 445, 806 578, 878	Cents 92.6 79.3 88.5 90.7 85.8 91.1 84.9	1,000 dollars 579,011 331,203 375,718 408,525 401,004 406,164 521,625	1930	Thousands 469, 955 460, 489 451, 219 461, 930 455, 182 411, 581	Cents 92. 8 70. 4 61. 7 45. 1 42. 2 54. 3	1,000 dollars 436, 272 324, 405 278, 211 208, 284 191, 954 223, 651

¹ Census report.

Table 422.—Chickens: Estimated number on farms and value per head, by States, Jan.~1,~1932-35

State and division	Nu	mber of ch	ickens Jan	1		Value p	er head	
Distre and division	1932	1933	1934	1935	1932	1933	1934	1935
Maine	Thous. 1, 780 1, 090 827 2, 190 1, 960 14, 340 5, 525 18, 900	Thous. 1, 900 1, 160 868 2, 215 374 2, 015 14, 765 5, 840 19, 830	Thous. 1, 931 1, 214 865 2, 233 374 2, 092 15, 252 5, 755 19, 858	Thous. 1,713 1,151 771 1,996 328 1,971 14,367 5,283 19,838	Cents 110 120 105 125 125 105 97 112 93	Cents 88 95 88 105 105 90 81 94 68	Cents 85 90 77 100 102 86 74 91 67	Cents 90 102 88 105 107 98 84 95 78
North Atlantic	46, 962	48, 967	49, 574	47, 418	100. 2	79. 7	75.9	85.1
Ohio Indiana Illinois Michigan Wisconsin	21, 375 17, 200 26, 020 12, 295 14, 800	22, 895 17, 830 26, 870 12, 835 14, 930	22, 665 17, 564 26, 523 12, 903 15, 851	20, 910 16, 052 24, 077 11, 129 15, 214	67 64 63 71 61	47 45 45 50 47	45 40 40 45 40	60 55 54 62 57
East North Central	91, 690	95, 360	95, 506	87, 382	64. 9	46. 5	41. 9	57.2
Minnesota Iowa Missouri North Dekota South Dakota Nebraska Kansas	19, 170 34, 150 27, 170 4, 830 9, 125 15, 810 21, 590	19, 160 33, 875 28, 320 5, 005 9, 490 15, 980 21, 785	18, 727 35, 335 27, 146 4, 844 8, 707 16, 806 22, 102	16, 660 31, 915 23, 271 3, 752 6, 312 13, 108 17, 706	51 56 54 47 51 47 46	35 43 36 32 34 34 34	30 37 31 28 28 30 29	46 49 43 01 44 34 29
West North Central	131, 845	133, 615	133, 667	112,724	51. 5	36.8	31.7	44.2
North Central	223, 535	228, 975	229, 173	200, 106	57.0	40.8	35.9	49.9
Delaware_ Maryland. Virginia. West Virginia North Carolina South Carolina Georgia. Florida	1, 970 5, 225 9, 720 3, 965 8, 960 4, 060 7, 935 2, 785	2, 029 5, 345 10, 365 4, 220 9, 560 4, 270 7, 795 2, 745	2, 188 5, 135 9, 694 4, 067 9, 136 4, 022 7, 657 2, 504	2, 118 5, 419 9, 729 3, 932 8, 829 4, 049 7, 287 2, 549	82 78 68 63 59 57 52 70	59 57 45 47 39 45 40 58	58 58 47 47 44 49 41 57	71 71 58 54 56 55 50 65
South Atlantic	44, 620	46, 329	44, 403	43, 912	63.8	45.9	47. 9	58. 3
Kentucky Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	10, 425 10, 880 7, 545 7, 420 8, 170 5, 075 13, 085 26, 830	11, 085 11, 775 7, 840 7, 625 8, 820 4, 944 14, 100 27, 680	10, 948 11, 192 7, 466 6, 609 7, 938 5, 007 12, 689 25, 958	10, 703 11, 123 7, 169 6, 717 6, 903 4, 798 10, 623 22, 508	54 51 44 47 43 57 48	35 33 35 35 30 38 30 32	33 32 37 37 28 40 27 33	46 46 43 43 37 48 39 40
South Central	89, 430	93, 869	87, 807	80, 549	48.4	32. 8	32. 6	42.2
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	2, 190 2, 650 870 4, 110 1, 145 760 2, 795 327 7, 620 3, 565 20, 640	2, 260 2, 450 840 4, 000 1, 240 2, 390 2, 390 7, 645 3, 292 18, 610	2, 266 2, 491 4, 098 1, 179 790 2, 669 285 7, 613 3, 262 18, 721	1,917 2,170 730 3,663 1,015 688 2,319 2,57 7,080 3,161 16,587	53 52 53 52 59 71 53 62 65 72 80	42 40 44 34 41 63 46 60 55 53 64	38 39 39 34 36 57 44 59 49 53 58	44 46 48 42 41 71 47 64 63 63
Western	46, 672	43, 790	44, 225	39, 596	68, 7	54. 3	49. 9	60.5
United States	451, 219	461,930	455, 182	411, 581	61. 7	45. 1	42. 2	54.3

Table 423.—Chickens: Number raised and value per head, by States, 1931-34

		Numbe	r raised			Value p	er head	
State and division	1931	1932	1933	1934	1931	1932	1933	1934
Maine. New Hampshire. Vermont. Massachusetts. Rhode Island. Connecticut. New York. New York. New Jersey. Pennsylvania.	Thous. 3, 380 2, 640 1, 380 5, 120 640 3, 795 18, 555 7, 480 23, 640	Thous. 3, 650 2, 640 1, 520 5, 530 685 3, 795 21, 336 7, 855 24, 800	Thous. 3,796 3,010 1,672 5,862 712 4,175 22,616 7,855 24,800	Thous. 3, 227 2, 709 1, 338 4, 983 606 3, 549 19, 224 7, 305 24, 056	Cents 89 87 84 87 95 90 72 96 78	Cents 69 68 64 66 78 74 59 76	Cents 59 55 57 57 66 58 50 68	Cents 63 62 58 64 70 64 54 74
North Atlantic	66, 630	71,811	74, 498	66, 997	80. 9	64. 4	53. 9	59. 9
Ohio Indiana Illinois Michigan Wisconsin	29, 710 27, 280 35, 140 18, 510 20, 016	32, 085 29, 190 37, 250 18, 880 19, 610	33, 370 29, 482 37, 622 20, 579 22, 747	28, 698 25, 356 34, 612 16, 257 20, 246	62 60 64 60 56	44 45 46 45 38	37 36 37 37 34	48 47 48 46 39
East North Central	130, 656	137, 015	143, 800	125, 169	60. 9	44.0	36. 3	46, 1
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	27, 790 45, 830 34, 890 6, 990 13, 085 22, 950 31, 645	27, 235 44, 455 39, 430 6, 920 13, 085 23, 640 33, 225	28, 324 50, 234 38, 641 7, 335 13, 870 26, 004 35, 883	23, 509 44, 206 34, 390 5, 721 8, 322 22, 104 29, 783	52 62 52 45 52 45 51 48	35 43 36 32 36 37 34	28 34 27 26 28 27 24	38 45 34 31 36 34 30
West North Central	183, 180	187, 990	200, 291	168, 035	53. 4	37. 1	28. 4	36.7
North Central	313, 836	325, 005	344, 091	293, 204	56. 5	4 0. 0	31. 7	40.7
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia Florida	2, 950 7, 050 16, 550 4, 905 13, 650 7, 360 11, 635 3, 410	3, 245 7, 755 19, 030 6, 130 15, 015 7, 730 11, 635 3, 070	3, 570 7, 042 16, 746 5, 333 14, 114 6, 725 11, 635 2, 763	3, 213 6, 760 17, 583 5, 440 13, 408 6, 927 10, 588 2, 708	67 72 56 61 47 51 46 58	49 51 37 40 35 37 33 50	43 45 35 37 32 34 31 42	53 53 42 45 38 39 38 47
South Atlantic	67, 510	73, 610	67,928	66, 627	54. 5	38.8	35. 5	42, 3
Kentucky- Tennessee Alabama Mississippi Arkansas Louisiana Oklahoma Texas	14, 530 14, 224 10, 500 10, 180 10, 845 5, 825 20, 497 34, 460	16, 855 15, 930 11, 340 10, 405 11, 725 5, 941 22, 135 35, 840	16, 181 15, 133 10, 773 8, 948 10, 318 6, 238 19, 921 32, 256	16, 181 14, 679 9, 696 9, 664 8, 977 5, 988 17, 331 29, 030	49 47 37 37 43 48 45 41	34 33 27 30 29 34 30 29	28 27 26 25 23 31 23 25	35 34 30 30 29 36 29 29
South Central	121, 061	130, 171	119, 768	111, 546	43. 2	30. 4	25. 6	31. 1
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Neveda Washington Oregon California	3, 610 3, 427 1, 400 5, 245 1, 450 947 3, 388 448 10, 663 5, 330 24, 900	3, 680 3, 015 1, 190 5, 040 1, 670 995 2, 752 336 11, 090 4, 477 21, 165	3, 496 3, 317 1, 357 5, 393 1, 586 1, 015 3, 633 420 10, 868 4, 790 22, 223	2, 972 3, 029 1, 153 5, 339 1, 348 863 2, 906 336 10, 107 4, 646 21, 112	48 48 47 47 50 72 42 65 50 52 55	40 34 38 35 40 59 36 47 35 40	32 27 33 28 32 50 29 45 31 33 42	34 32 37 33 32 57 31 46 35 36 41
Western	60, 238	55, 410	58, 098	53, 811	51.7	41.0	35. 3	37. 2
United States	629, 275	656, 007	664, 383	592, 185	55. 9	40.7	33.8	40.9

Table 424.—Chickens: Number raised and value, United States, 1924-34

Year	Number	Value per head	Total value	Year	Number	Value per head	Total value
1924 ¹	Thousands 545, 848 608, 268 643, 649 672, 123 627, 357 673, 092	Cents 76.8 72.0 76.3 71.9 76.7 86.3	1,000 dol. 419, 881 437, 665 491, 370 483, 430 481, 362 581, 110	1929 1930. 1931. 1932. 1933. 1934.	Thousands 673, 070 653, 101 629, 275 656, 007 664, 383 592, 185	Cents 77. 9 63. 2 55. 9 40. 7 33. 8 40. 9	1,000 dol. 524,383 412,904 351,584 267,252 224,459 242,422

¹ Census report.

Bureau of Agricultural Economics.

Table 425.—Poultry, live: Freight receipts at New York, by State of origin, 1930-34

State	1930	1931	1932	1933	1934	State	1930	1931	1932	1933	1934
	Cars	Cars	Cars	Cars	Cars		Cars	Cars	Cars	Cars	Cars
Alabama	129		151	99	36	New Jersey	1				
Arkansas	349	359	290	248	304	New Mexico	2				
Colorado	82	24	17	2	1	New York					
Delaware	1					North Carolina	107	63	50	35	9
Florida	4	3	4			North Dakota	55	76		35 22	6
Georgia	79	62	35			Ohio	305	335	461	462	336
Illinois	1, 174	978	851	1, 234		Oklahoma	763	728	445	248	343
Indiana	1, 168	942	1,051	1,092	981	Pennsylvania	12	8	4	1	
Iowa	604					South Carolina	49	59	44	24	
Kansas	509	447	430	254	236	South Dakota	214			157	147
Kentucky	511	593	596	732	580	Tennessee	642	857	690	805	618
Louisiana			12	3		Texas	332	233	183	125	
Maryland	2	1			3	Utah					
Massachusetts						Virginia	91	96	66	34	23
Michigan			2	3		Wisconsin	188	192	68	10	2
Minnesota	123	187	58	29	28	Wyoming	4	1			ī
Mississippi	76	75	60		33	Other States				1	
Missouri	2,019	1,650	1, 839	1,611	1,667	1		ļ			
Nebraska	1,082	985	802	432	659	United States	10,677	10, 152	9, 126	8, 150	7,641

Table 426.—Poultry, dressed: Receipts, gross weight, at 4 markets, by months, 1930-34, and total, 1925-34

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1,000
Boston:	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1930	4, 270							2, 952				9, 309	
1931	4, 840			2,976	2,559	3, 216		3, 635	3, 787	4 434		10,750	
1932	4, 141	3, 927	4, 094		2,967	3, 255	2, 839	3, 487	3, 619			12, 256	
1933	5, 543					4, 128	3, 800	4,004				11, 468	
1934	4, 545						3, 202	3, 330	3, 243	4 240		9, 482	
New York:	x, 030	0,002	2,011	2,000	3,500	0,000	0, 202	0,000	0, 220	4, 240	0,012	0, 402	02,012
1930	15 054	11 674	8 476	10 630	12 277	14 000	11 207	10 522	15 383	10 647	29 524	24 991	200, 885
1931	17 060	12 306	0, 270	10,000	10, 553	12 857	15 949	18 204	21 147	18 740	33, 030	36 882	218, 911
1932	19 524	0 010	10 202	0, 050	11 454	12 799	19 700	14 900	15 269	10, 770	34 600	32 057	195, 445
1933	15 747	11 925	10, 063	19 115	15 013	15 841	14 144	16 320	17 417	21 220	30 622	33 048	223, 094
1934	10 160	10 057	0, 705	2 200	19 622	15 078	15 080	14 477	18 119	10 717	32 054	30, 057	204, 067
Philadelphia:	10, 100	10, 001	3, 100	0, 200	12,000	10, 810	10,000	12, 211	10, 110	10, 111	34 302	50,002	201, 001
1930	3.041	2,501	2, 207	1,991	2, 388	2, 117	1,794	1,772	2, 166	3, 046	5,607	7,906	36, 536
1931			2, 863	1, 754	1,560	2,509	2, 729	2, 875	2, 555	2, 524			
1932	1,881	2, 467	1,943	1,960	2, 555			2, 191		2, 614	6, 259		
1933	3, 141		1, 894			2, 344		1, 900	1,743	5, 508	6, 591		
1934	2, 725		1. 745		2, 381	1,859	2, 371	2, 136	1,998	2, 405	5, 599		
Chicago:	2,120	2, 101	1, 740	1,011	2,001	1,000	4011	2, 100	1, 000	4, 400	0,000	0, 220	20,012
1930	9, 835	5, 597	2,899	2, 339	2, 163	2,645	2, 303	2,777	3, 809	6 274	10 400	20, 103	80, 153
1931				2, 320		2, 501	3, 130	3, 673	4, 642	4 307		18, 438	
1932	4.855	3, 317			1,428	1,326	853	1, 616	3, 333	5 939		19,752	
1933	4,713	2, 442	1, 241	859	1, 294	1,558	1, 668	1, 355	1 474	9 089		16, 113	
1934	3, 900	1, 785	1, 452			1, 235			2, 262			10, 620	
Total.	3, 500	1, 100	1, 402	101	000	1,200	1, 200	1,021	2,002	7, 200	10,00,	20,020	22,102
1925	27 505	10 202	15 040	12 200	16 166	17 497	17 676	17 488	10 400	27 250	A1 400	68 704	318, 358
1926	26 199	10 578	17 344	13 800	16 271	21, 200	20 794	22 032	24 278	30 738	88 504	75 222	356 815
1927	20, 122	18 110	15 265	19 779	10, 011	21, 000	17 790	22 276	23 035	28 710	80 422	68 074	355, 815 336, 979
1928	28, 602	20, 019	17 580	15 21	17 600	18 571	21 253	21, 010	23 564	25 163	50 789	68 537	348, 983
1929	20, 002	10 451	18 666	16 571	17 210	20, 179	21 225	25, 639	27 270	37 262	71 001	75 705	379, 522
1930	29, 001	22 784	18 30	17 50	101 691	93 975	10 305	20, 000	24 512	32 842	65 970	71 520	368, 863
1931	22 062	24 660	20, 30	17 199	18 001	21 223	24 577	20, 003	22, 121	30 104	62 049	74 313	386, 361
1932	92 411	10 821	18 79	15 045	110, 801	20, 243	12 319	21 522	24 410	21 769	71 227	72 700	355, 454
1933	20, 111	20, 707	17 40	18 370	22 706	23 671	21 727	23 500	24 573	31 580	78 319	68 348	380, 318
1934	20, 226	17 097	115 810	19 786	10 237	22 45	22 079	21 584	24 241	30 667	82 100	56 431	334, 415
+007	140, 000	111, 841	120, 015	112,100	110, 201	1mm, 200	Judy Of C	INT OUT	INN ATT	00,001	102 102	loot and	100 4 210

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various

Table 427.—Poultry, dressed: Receipts, gross weight, at 4 markets, by State of origin, 1930-34

Market and origin	ROSTON 1,000 1,0												
Display 1,0	Display 1,0		1930	1931	1932	1933	1934		1930	1931	1932	1933	1934
Total	Total	III Ind Iowa Kans Ky Maine Mass Mich Minn Mo Nebr N J N Dak Ohio Okla Pa S. Dak Tenm Tex Vt Wis Other States	7b. 10, 497 3, 677 7, 495 2, 1355 479 377 5, 155 15, 9, 024 2, 328 1, 521 1, 721 1, 737 1, 737 1, 737 1, 742 742	7b. 9, 284 3, 296 8, 917 3, 7247 319 55 424 9, 502 2, 100 3, 763 13 942 2, 254 1, 369 1, 541 323 7, 093 11, 323 7, 223 1, 252 1, 252 1, 252 1, 254 1, 323 1, 254 1, 323 1,	7b. 8, 909 3, 270 9, 109 3, 495 313 313 56 5, 835 3, 126 5, 258 1, 474 2, 723 5, 258 1, 474 2, 723 1, 756	76. 8, 698 4, 3011 10, 1444 4, 3446 614 2077 2 253 10, 3511 2, 6446 621 4, 526 228 2, 0152 4, 065 74 11, 492	7b. 8, 625 2, 948 8, 785 3, 485 196 101 2, 9, 331 4, 2, 751 6, 349 3, 446 3, 446 3, 575 2, 575 3, 629 962	Ark. Calif. Colo. Idaho. Ill. Ind. Iowa. Kans. Ky. Mich. Minn. Mo. Mont. Nebr. N. J. N. Mex. N. Y. N. Dak. Ohio. Okla. S. Dak. Tenn. Tex. Wis.	b. 216 78 546 446 446 3, 521 18, 152 4, 111 143 111 9, 891 5, 989 3, 875 7, 616 1,880 9, 108 9, 381 6, 288 3, 135	7b. 381 1338 433 84 3, 217 13, 680 4, 779 10, 4580 1, 135 4, 273 164 2, 266 6, 59 2, 282 2, 282 2, 393 4, 310	7b. 38 631 34 2, 734 2, 734 11, 684 9, 512 4, 293 1, 339 2, 789 24, 293 1, 339 2, 789 10, 850 8, 312 4, 1, 789	7b. 18 2 3333 10 3, 673 9, 702 1, 813 195 66 70, 732 1, 377 12, 064 1, 486 44, 486	7b. 106 3 384 1 3, 383 280 8, 985 1, 783 182 182 193 29 69 7, 164 4, 046 4, 046 4, 046 4, 046 4, 046 1, 544 3, 267 1, 544 1, 54
Ark	Ark	Total	51, 289	57, 782	58, 213	64, 728	52, 672	Other States.	779	264 329	526	235 50	120
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	NEW YORK						Total	80, 153	71, 475	65, 349	55, 430	44, 704
		N. Y. N. Dak. Ohio Okla. Oreg. Pa. S. Dak. Tenn. Tex. Utah. Va. Wash. Wis. Wyo. Other States. Canada.	14, 415 2, 099 2, 519 6, 410 338 537 5, 007 2, 339 15, 301 559 1, 586 338 1, 304 449	23, 858 2, 783 3, 154 8, 503 747 801 6, 625 3, 890 15, 612 722 722 723 355 1, 103 600 42	1, 707 1, 741 1, 422 20, 970 8, 368 26, 995 19, 746 10, 339 10, 339 10, 351 10, 331 10, 351 10	1, 1005 738, 090 7, 305 38, 090 21, 936 2, 484 199 136 370 26, 806 16, 385 14, 189 217 20, 110 5, 786 3, 406 9, 765 7, 720 114, 518 8, 057 2, 718 14, 018 3388 901 901 9534	2, 235 1, 628 14, 194 14, 194 40, 370 21, 424 21, 073 104 27, 632 13, 101 13, 553 13, 553 14, 971 2, 958 9, 517 2, 958 9, 512 2, 334 10, 106 4, 971 2, 106 106 106 106 106 106 106 106 106 106	Colo_Idaho III Ind Iowa Kans. Ky_ Md Mich. Minn Mo. Nebr. N. J. N. Y. N. Dak Ohio Okla Pa. S Dak Tex Va. W. Va. Wis Other States	16 592 2, 897 1, 562 6, 577 2, 248 7566 82 117 7, 595 1, 222 11, 288 812 2, 418 69 922 3, 029 853 302 11, 274	200 3, 627 1, 401 16, 333 2, 496 218 844 266 8, 707 1, 570 2, 416 793 92 2, 508 4, 816 421 143 122 600	237 3, 071 879 6, 544 2, 242 791 40 47 6, 995 2, 401 2, 321 46 1, 273 83 2, 092 63 679 4, 955 462 1166 646 551	319 3, 850 622 6, 641 2, 207 794 42 28 5, 137 2, 207 2, 369 171 1, 260 325 1, 549 6 788 5, 479 380 146 234 2, 037	283 3, 059 5, 820 2, 255 701 14 28 5, 094 2, 551 2, 449 953 953 1, 164 4, 426 362 1, 131 1, 532

¹ Gross weight includes container and wrapping.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets.

Table 428.—Poultry: Receipts at New York, Chicago, Philadelphia, and Boston. 1920-34

DRESSED POULTRY 1

Year	New York	Chicago	Philadel- phia	Boston	Year	New York	Chicago	Philadel- phia	Boston
1920	1,000 lb. 101,093 124,551 138,212 163,948 179,362 170,257 192,895 188,117	1,000 lb. 57, 324 64, 992 73, 661 90, 273 88, 464 72, 086 77, 632 63, 735	1,000 lb. 21,606 22,892 21,319 24,611 27,640 29,295 32,126 31,822	1,000 lb. 34, 086 39, 921 44, 563 56, 013 61, 264 46, 720 53, 162 53, 305	1928 1929 1930 1931 1932 1933 1934	1,000 lb. 194, 376 197, 057 200, 885 218, 911 195, 445 223, 094 204, 067	1,000 lb. 67, 180 93, 368 80, 153 71, 475 65, 349 55, 430 44, 704	1,000 lb. 31, 844 34, 664 36, 536 38, 193 36, 447 37, 066 32, 972	1,000 lb. 55,583 54,433 51,289 57,782 58,213 64,728 52,672

LIVE POULTRY

77	N	ew York	1	**	N	ew York	2		Chicago	
Year	Freight	Express	Truck	Year	Freight	Express	Truck	Freight	Express	Truck
1920 1921 1922	Cars 8, 454 10, 730 411, 672	Cars 3	Cars 3	1927 1928 1929	Cars 12, 104 11, 267 10, 493	Cars 3 830 833 599	Cars 3	Cars 1, 314	Cars ³	Cars 3
1923 1924 1925 1926	12, 072 11, 677 10, 498 11, 497	443 586 747 668		1930 1931 1932 1933 1934	10, 677 10, 152 9, 126 8, 150 7, 641	423 253 142 101 99	1, 386 1, 498 2, 048 2, 317 2, 428	1, 141 837 318 155 305	2, 113 1, 277 570 358 360	2, 122 2, 902 3, 461 3, 772 3, 658

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets.

Table 429.—Poultry, fresh dressed: Average wholesale price per pound, New York City, by months, 1933 and 1934

			1	1933						1934		
Month	Fowl	Broil- ers	Fry- ers	Roast- ers	Cocks	Weight- ed aver- age 1	Fowl	Broil- ers	Fry- ers	Roast- ers	Cocks	Weight- ed aver- age 1
January February March April May June July August September October November December	Cents 16. 00 15. 40 16. 20 16. 12 14. 56 14. 60 14. 86 13. 98 13. 40 13. 80	17. 00 19. 20 23. 25 20. 00 18. 90 18. 35 18. 30 16. 70	21. 10 19. 80 17. 60 16. 10 14. 60	16. 50 12. 16 	11.00 11.00 11.00 11.00 10.70 10.00 10.00 10.00 9.50	15. 61 14. 64 16. 01 16. 69 15. 68 15. 76 16. 23 17. 22 15. 37	15. 18 16. 58 18. 00 17. 50 16. 13 15. 48 16. 71 18. 20 17. 04 17. 18	24. 50 25. 62 21. 04 21. 13 22. 80 22. 10 21. 00	27. 73 24. 68 23. 81 20. 30 19. 00 18. 26	18. 00 18. 00 26. 43 26. 00 25. 90 21. 25 21. 80	10.00 10.00 10.33 10.37 9.50 10.12	15. 30 15. 62 14. 71 16. 16 17. 74 17. 66 19. 45 20. 87 18. 97 19. 06
Weighted aver- age 1	14. 72	18. 87	16. 01	17.48	10. 16	15. 61	16. 66	22. 35	20. 49	21.74	11. 12	18. 36

Weighted on basis of market receipts by classes.

Bureau of Agricultural Economics. Compiled from American Creamery and Poultry Produce Review.

Gross weights, which include container and wrapping.
 From 1919-26, inclusive, compiled from reports of Urner-Barry Co.
 Car-lot equivalents calculated from express and truck receipts.
 Includes express.

Table 430.—Poultry, frozen: Cold-storage holdings, by months, United States, 1925-34

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1925	109, 684 140, 723 104, 913	145, 076 118, 154 102, 380 141, 552 101, 307 111, 554 104, 833	95, 397 129, 510 103, 494 89, 088 133, 172 95, 188 96, 422	104, 697 83, 169 68, 728 105, 708 69, 986 74, 660 67, 285	52, 788 77, 282 56, 832 52, 901 77, 420 45, 920 56, 676 45, 824	42, 808 61, 525 43, 872 41, 643 61, 167 35, 348 44, 829 38, 131	36, 730 50, 064 38, 230 42, 001 54, 253 32, 762 36, 661 42, 705	35, 793 42, 293 40, 395 40, 896 46, 967 36, 438 31, 471 44, 970	38, 634 39, 711 40, 749 49, 010 42, 589 43, 056 30, 305 47, 789	44, 771 43, 201 43, 578 61, 976 46, 938 56, 215 36, 683 50, 177	64, 842 52, 315 58, 093 86, 873 59, 269 65, 668 54, 989 59, 528	106, 854 85, 030 79, 173 115, 876 82, 925 89, 971

¹ Quantities given are net weight.

Table 431.—Chickens, live: Average price per pound received by producers, United States, 1925-34

Year	Jan. 15	Feb.	Mar. 15	Apr. 15	Мау 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Weighted average
1925	Cents 18.5 20.9 20.1 19.6 21.6 19.8 15.7 13.3 9.3 9.4	Cents 19. 1 21. 5 21. 1 20. 1 22. 1 20. 4 15. 1 12. 6 9. 4 10. 2	Cents 20. 0 21. 9 21. 3 20. 1 22. 7 20. 6 16. 1 12. 6 9. 1 10. 7	Cents 21. 1 23. 1 21. 8 20. 8 23. 8 21. 1 16. 7 12. 6 9. 8 11. 1	Cents 22.0 23.7 21.7 21.5 24.4 20.0 15.9 12.2 10.4 11.2	Cents 21. 6 23. 9 20. 2 21. 5 24. 6 19. 0 16. 1 11. 4 10. 0 11. 2	Cents 21. 4 23. 6 19. 9 21. 9 23. 7 17. 4 15. 8 11. 7 10. 4 11. 7	Cents 20.8 22.1 19.7 21.6 22.7 17.3 16.2 11.7 9.8 11.4	Cents 20. 4 21. 4 19. 4 22. 3 22. 4 17. 8 15. 7 11. 6 9. 5 12. 7	Cents 20.0 20.8 19.7 22.0 21.5 17.4 14.4 10.7 9.3 11.8	Cents 19. 2 20. 0 19. 4 21. 5 20. 3 16. 1 14. 4 10. 1 8. 8 11. 7	Cents 19. 5 19. 8 19. 2 21. 2 19. 1 15. 3 13. 9 9. 2 8. 6 11. 7	Cents 19. 9 21. 2 20. 0 21. 4 21. 7 17. 8 15. 0 11. 1 9. 1 11. 2

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by census production in 1919 to obtain the United States averages from 1925 through May 1932, and by 1929 census sales thereafter. Yearly price obtained by weighing annual State averages by sales in each State. Data for earlier years in 1922 Yearbook, table 483.

Table 432.—Turkeys, live: Average price per pound received by producers, United States, 1924-25 to 1934-35

Season	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Season	Oct. 15	Nov. 15	Dec. 15	Jan. 15
1924–25 1925–26 1926–27 1927–28 1928–29 1929–30	Cents 23.3 24.0 26.6 26.4 27.2 27.2	Cents 24, 2 28, 3 29, 8 30, 8 31, 2 27, 1	Cents 25. 8 31. 1 32. 8 32. 3 30. 5 23. 5	Cents 26. 2 31. 7 31. 6 29. 8 28. 2 23. 7	1930-31 1931-32 1932-33 1933-34 1934-35	Cents 21. 0 17. 9 13. 2 11. 3 12. 7	Cents 20. 1 18. 3 12. 9 11. 8 14. 6	Cents 19.9 19.4 10.9 11.1 16.0	Cents 21, 6 18, 0 10, 2 11, 6 16, 0

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by census production in 1919 to obtain the United States averages from 1925 to October 1932, and by 1929 census sales thereafter.

TABLE 433.—Eggs: Production and value in the United States, 1925-34

Year	Production	Value per dozen	Total value	Year	Production	Value per dozen	Total value
1984 ¹ 1925 1926 1927 1927 1928 1929 ¹	Millions 22, 959 27, 910 30, 148 31, 761 32, 523 32, 276	Cents 29.9 30.2 28.7 24.9 27.8 29.5	1,000 dol. 671, 958 701, 405 721, 697 658, 348 754, 428 793, 803	1930	Millions 33, 529 34, 442 32, 308 31, 828 31, 006	Cents 23. 5 17. 3 13. 9 13. 6 16. 8	1,000 dol. 656, 792 496, 397 373, 805 359, 686 433, 510

¹ Census report.

Bureau of Agricultural Economics. Compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, table 482.

Bureau of Agricultural Economics.

Table 434.—Eggs: Production and value per dozen, by States, 1931-34

				po. 0000	, 0 9 ~			т ———
Granda and diminian		Produ	iction			Value p	er dozen	
State and division	1931	1932	1933	1934	1931	1932	1933	1934
Maine	Millions 181 112 83 244 33 179 1, 244 438 1, 550	Millions 185 113 82 244 33 192 1,225 443 1,504	Millions 198 126 86 246 36 203 1,270 467 1,514	Millions 191 126 83 253 37 210 1,301 475 1,571	Cents 29. 4 31. 1 26. 8 36. 2 32. 3 32. 3 25. 1 29. 0 22. 8	Cents 24. 6 26. 1 22. 4 30. 5 27. 7 27. 0 20. 9 23. 9 18. 2	Cents 21.9 23.9 20.7 28.2 25.8 25.8 19.8 23.4 17.6	Cents 25.8 28.1 24.6 31.4 29.8 29.0 22.9 26.4 20.8
North Atlantic	• 4,064	4, 021	4, 146	4, 247	26. 2	21.6	20. 5	23.8
Ohio Indiana Illinois Michigan Wisconsin	1, 721 1, 291 1, 703 1, 012 1, 268	1, 646 1, 219 1, 606 1, 057 1, 163	1, 592 1, 173 1, 597 1, 036 1, 166	1, 579 1, 150 1, 573 1, 016 1, 272	18. 2 16. 2 16. 1 18. 3 16. 5	14.1 12.5 12.5 14.6 13.8	13. 8 12. 1 11. 9 13. 4 13. 1	16. 8 15. 4 15. 5 16. 9 16. 2
East North Central	6, 995	6, 691	6, 564	6, 590	17. 0	13. 4	12.9	16. 2
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	1, 452 2, 562 2, 286 330 706 1, 181 1, 757	1, 316 2, 320 2, 076 275 556 1, 027 1, 533	1, 332 2, 356 2, 024 284 582 1, 051 1, 533	1, 281 2, 333 1, 814 255 467 1, 002 1, 390	14. 6 14. 8 14. 2 12. 6 13. 0 12. 8 13. 3	11.7 11.8 11.0 10.1 10.7 10.3 10.2	11.5 11.1 10.3 9.8 10.0 10.0 9.9	14. 4 14. 3 13. 6 12. 8 13. 0 12. 8 13. 0
West North Central	10, 274	9, 103	9, 162	8, 542	13.9	11.0	10.6	13.7
North Central	17, 269	15, 794	15, 726	15, 132	15. 2	12. 1	11.5	14.8
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia Florida	148 339 683 343 429 194 379 180	140 356 713 336 425 177 378 179	137 356 721 324 435 178 361 171	134 356 702 311 442 174 344 158	23. 1 21. 4 19. 2 19. 9 19. 7 21. 5 19. 4 23. 8	18. 2 16. 4 14. 6 14. 7 15. 0 16. 2 15. 4 19. 0	17. 2 16. 3 14. 8 15. 0 15. 3 16. 2 15. 3 19. 0	20. 2 19. 6 18. 0 18. 0 19. 2 19. 6 18. 9 23. 0
South Atlantic	2, 695	2, 704	2, 683	2, 621	20.5	15. 7	15.7	19. 1
Kentucky	609 653 438 353 446 260 920 1,900	601 651 425 358 483 246 878 1,803	595 632 415 328 469 243 851 1,723	592 614 408 308 429 237 778 1,569	15. 9 15. 7 16. 7 16. 3 14. 4 17. 7 13. 0 13. 8	11. 9 11. 6 12. 9 12. 2 10. 9 13. 2 9. 7 10. 2	11. 5 11. 5 13. 0 12. 4 10. 6 13. 3 10. 3 10. 8	15. i 15. 2 16. 8 15. 5 14. 0 16. 2 13. 6
South Central	5, 579	5, 445	5, 256	4, 935	14.6	10. 9	11.2	14.8
Montana Idaho Wyoming Colorado New Mexico Arizona Utah Nevada Washington Oregon California	176 225 75 333 83 64 319 30 923 331 2, 276	150 210 68 289 79 58 274 27 858 334 1,997	155 193 65 271 82 58 253 23 817 299 1,801	149 188 62 268 75 60 273 26 837 314 1,819	15. 7 14. 4 18. 4 16. 2 18. 1 25. 3 16. 7 19. 9 18. 8 17. 2	14. 7 12. 8 15. 7 12. 8 14. 3 20. 0 14. 3 17. 9 15. 7 15. 0	13.6 14.0 14.9 12.5 14.3 19.8 14.5 18.4 16.4 15.5	15. 2 15. 0 17. 0 14. 8 17. 2 23. 6 16. 2 20. 0 18. 4 17. 6 19. 0
Western	4, 835	4, 344	4, 017	4,071	18.8	16.1	16.3	18.0
United States	34, 442	32, 308	31, 828	31,006	17. 3	13.9	13, 6	16.8

TABLE 435.—Eags: Receipts at 6 markets by State of origin, 1930-34

Market and origin	1930	1931	1932	1933	1934	Market and origin	1930	1931	1932	1933	1934
BOSTON	1,000				1,000	NEW YORK-con.	1,000	1,000			1,000
	cases	cases	cases	cases	cases	11 _	cases	cases	cases	cases	cases
Illinois	161	191	138	88	116	Oregon	53	94	126	85	68
Indiana	117	101	87	100	66	Pennsylvania	214	166	179	231	246
Iowa		323	282	283	304	Tennessee		_36	33	50	5
Kansas		211	204	172	135	Utah	396	554	378	285	310
Maine		45	35	43	39	Virginia	79	39	58	76	59
Massachusetts	10	9	6	11	11	Washington	760	859	683	629	653
Michigan	35	47	37	35	38	Wisconsin	49	57	34	66	92
Minnesota	229	229	157	136	159	Other States	250	255	248	317	230
Missouri	64	80	82	80	101	(Data)	7 705	7 001	2 700	0.00=	
Nebraska New Hampshire	139 28	117	107	96	84	Total	7,595	7,601	6, 702	6, 885	6, 436
New York	27	24 25	23 15	35	29						
					4	PHILADELPHIA	ŀ	l	l	1	l
Ohio	17	55	70	54	36	California	110	0=			
Vermont Other States	195	15	15	19	15	California	112	97	72	41	44
Other States	190	164	181	171	156	Delaware	144	24	10	15	15
Total	1 279	1 000	1 490	1 990	1 000	Illinois	124	187	118	120	113
10141	1,0/3	1, 636	1, 439	1, 330	1, 293	Indiana	144	35	25	31	28
07701.60						Iowa.	125	154	139	182	164
CHICAGO	1		į	1		Kansas	78	101	121	105	59
California	00	70		-		Maryland	55	33	19	34	25
Illinois	33 150	73 127	219	368	11 296	Michigan	47	69	27	36	30
Iowa	977		708	881		Minnesota	237	227	223	222	185
Kansas	232	959			936	Missouri	157	207	255	210	134
Michigan	232	295 13	319	375	226	Nebraska	39	37	37	46	30
Minnesota	772		58	68	52	NewYork	22	20	31	29	32
Missouri		778	401	375	472	Ohio	47	27	23	40	61
Nebraska	542 399	555 340	678	932 213	676 185	Pennsylvania	287	177	119	160	208
North Dakota	399		159			Tennessee	25	.9	20	15	8
Oklahoma	40 35	51		39	21	Virginia	86	37	39	50	55
South Dakota	508	34	97	48	39 202	Washington	72	76	56	47	54
Texas	13	459	279	310	202	West Virginia	4	3	.5	3	5
Wisconsin	490	21 382	17	339		Wisconsin	65	67	45	31	30
Other States	262	227	254		458	Other States	89	143	112	113	126
Other States	202	221	199	175	123	Total	1, 759	1, 730	1, 496	1, 530	1 400
Total	4,475	4, 314	3,412	4, 135	3, 697	;	1, 100	= 1, 700	1, 400	1, 030	1,406
NEW YORK						SAN FRANCISCO					
						California	749	730	700	710	742
California	698	589	501	340	226	Idaho	1 2 2	100	100	710	742
Delaware	39	28	35	49	46	Oregon	8	20	12	17	10
Idaho	70	204	156	77	91	Washington	(1)	3	7	10	4
Illinois	829	704	631	540	574	Other States	6	3	4	12	18
Indiana	454	387	329	319	244			_		14	10
Iowa		1, 354	1,070	1, 151	1,083	Total	765	758	725	748	783
Kansas	275	255	278	300	206				120	720	100
Kentucky	31	24	40	38	14	LOS ANGELES					
Maryland	70	36	41	54	65	200 2110222				1	
Michigan	70	80	62	55	62	California	761	730	539	542	500
Minnesota	279	353	469	535	588	Idaho	22	6	9	12	598 20
Missouri	276	328	286	373	237	Oregon	5	14	13	20	20 20
Nedraska	166	273	216	178	178	Utah	52	3	15	42	33
New Jersey	228	232	201	214	177	Other States	4	14	16	39	36
New York	625	468	354	619	772					98	क्
Ohio	209	226	294	304	210	Total	844	767	592	655	707
	1			}						000	101

¹Not over 500 cases.

Bureau of Agricultural Economics; compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen.

Table 436.—Eggs: Receipts at 5 markets, 1919-34

Year	New York	Chi- cago	Phila- del- phia	Bos- ton	San Fran- cisco	Year	New York	Chi- cago	Phila- del- phia	Bos- ton	San Fran- cisco
1919 1920 1921 1922 1922 1923 1924 1925	1,000 cases 6, 008 4, 991 6, 579 6, 821 7, 156 6, 543 6, 894 6, 818	1,900 cases 4,617 4,154 4,155 4,634 5,009 4,679 4,498 4,575	1,000 cases 1,704 1,396 1,642 1,703 1,727 1,595 1,572 1,566	1,000 cases 1,659 1,648 1,823 1,970 1,944 1,829 1,833 1,808	1,000 cases 698 757 811 838 855 760 743 744	1927 1928 1929 1930 1931 1932 1933 1934	1,000 cases 7,048 7,288 7,129 7,595 7,601 6,702 6,885 6,436	1,000 cases 4,901 4,601 4,398 4,475 4,314 3,412 4,135 3,697	1,000 cases 1,549 1,735 1,697 1,759 1,730 1,496 1,530 1,406	1,000 cases 1,960 1,757 1,718 1,573 1,636 1,439 1,330 1,293	1,000 cases 750 756 765 765 758 725 748 783

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen.

TABLE 437.—Eags: Receipts at 5 markets, by months, 1931-34

Market and year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Boston:	1,000 cases 126	1,000 cases 153	1,000 cases 198	1,000 cases 207	1,000 cases 219	1,000 cases 188	1,000 cases 125	1,000 cases 108	1,000 cases 95	1,000 cases 77	1,000 cases 62	1,000 cases 78	1,000 cases 1,636
1932 1933 1934	98 92 88	138 98 118	181 145 164	164 207 170	201 175 156	155 141 142	117 132 98	109 91 101	79 58 68	71 68 71	64 58 66	62 65 51	1, 439 1, 330 1, 293
New York: 1931 1932 1933	478 475 593	530 554 491	940 663 769	1, 116 827 934	1, 052 873 1, 021	868 689 710	568 534 588	516 533 493	484 438 369	398 417 352	304 345 269	347 354 296	7, 601 6, 702 6, 885
1934 Philadelphia: 1931	412 133	605 148	777 189	752 205	815 184	662 186	527 141	420 132	374 124	373 92	337 97	382 99	6, 436 1, 730
1932 1933 1934 Chicago:	114 120 111	105 118 113	136 161 161	193 183 170	171 181 149	153 137 142	114 113 109	110 105 104	125 120 74	101 97 91	90 88 91	84 107 91	1, 496 1, 530 1, 406
1931 1932 1933 1934	231 178 189 125	367 224 229 267	634 378 491 647	867 657 881 889	709 663 1, 049 736	559 437 524 445	290 258 260 217	238 219 206 146	191 161 133 100	96 104 76 53	61 60 37 29	71 73 60 43	4, 314 3, 412 4, 135 3, 697
San Francisco: 1931 1932 1933		66 68 52	85 77 73	83 75 76	72 63 76	61 62 63	56 57 59	59 64 58	49 51 53	59 46 58	54 45 61	56 45 62	758 725 748
1934	72	62	75	70	71	61	58	57	49	67	66	75	783

Bureau of Agricultural Economics. Compiled from reports of Bureau representatives in the various markets. Reported in cases of 30 dozen. See 1927 Yearbook, table 453, and 1932 Yearbook, table 431, for data for earlier years.

Table 438.—Eggs, shell and frozen: Cold-storage holdings, United States, 1925-34

Kind and year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
Shell eggs: 1 1925	1,000 cases 1,050 1,683 1,096 882 1,415 704 1,894 1,475 159 731	578 253 26 248 139 735 663	84 408 258 163	2, 231 1, 893 700 1, 833	5, 501 4, 515 3, 952 5, 766 5, 162 2, 982 4, 857	7, 236 8, 962 8, 168 6, 705 9, 178 7, 887 5, 380 8, 062	9, 133 10, 565 10, 002 8, 510 10, 743 9, 507 6, 339 9, 364	9,845 10,746 10,496 8,962 11,198 9,504 6,431 9,507	9, 573 9, 650 9, 944 8, 547 10, 375 9, 016 5, 960 8, 944	8, 048 7, 960 8, 542 7, 195 9, 174 7, 960 4, 895 7, 466	5, 888 5, 485 6, 247 4, 930 6, 785 5, 745 3, 225 5, 175	3, 215 2, 956 3, 542 2, 631 4, 154 3, 447 1, 199 2, 641
Frozen eggs: ² 1925	1,000 lb. 21, 303 33, 905 33, 593 47, 020 56, 181 53, 644 83, 184 79, 198 55, 339 61, 419	29, 256 31, 207 38, 575 48, 055 44, 080 75, 685 72, 439 46, 448	24, 167 26, 053 31, 362 38, 250 35, 192 73, 889 68, 024 40, 450	1,000 lb. 11, 353 21, 849 33, 272 34, 411 34, 918 49, 751 78, 051 69, 031 45, 090	1,000 lb, 19,579 25,739 52,053 51,532 51,825 76,664 91,517 81,920 62,944	1,000 lb. 29,544 34,815 71,605 67,941 71,560 106,607 94,978 85,323	1,000 lb. 38,379 45,688 81,263 77,744 84,766 115,134 113,513 100,485	1,000 lb. 42,855 51,810 81,418 81,670 91,488 116,272 114,700 99,112	1,000 lb. 47,099 52,634 77,508 89,196	1,000 lb. 44, 299 51, 062 71, 208 82, 255 81, 541 106, 631 103, 302 84, 187 93, 182	1,000 lb. 45, 314 44, 966 62, 066 73, 327 70, 331 98, 359 94, 816 74, 314 82, 302	1,000 lb. 39, 336 38, 620 54, 703 64, 201 61, 772 89, 571 86, 407 64, 150 72, 348

¹³⁰⁻dozen cases.

² Quantities given are net weight. 35 pounds of frozen eggs are approximately equivalent to 1 case of 30 dozen shell eggs.

Bureau of Agricultural Economics; compiled from reports made by cold-storage establishments. Data for earlier years in 1928 Yearbook, tables 488 and 489.

Table 439.—Eggs: Average price per dozen received by producers, United States, 1925-34

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept.	Oct. 15	Nov.	Dec. 15	Weight- ed av- erage
1925	Cents 48. 6 36. 3 36. 9 38. 2 33. 0 38. 4 22. 1 17. 2 21. 4 17. 6	Cents 35. 7 28. 9 29. 0 29. 1 31. 9 31. 8 14. 1 12. 8 11. 0 15. 8	Cents 23. 9 24. 1 20. 8 23. 4 28. 0 21. 3 17. 0 10. 4 10. 1 14. 4	Cents 24. 2 24. 8 20. 3 22. 8 23. 0 21. 5 16. 2 10. 3 13. 5	Cents 24.8 25.2 19.8 24.2 24.4 20.0 13.3 11.8 13.3	Cents 26. 1 25. 7 17. 8 23. 9 26. 1 18. 6 14. 1 10. 6 10. 1 13. 2	Cents 27. 9 25. 7 20. 7 25. 6 27. 2 18. 8 14. 8 12. 0 13. 1 14. 1	Cents 30. 0 26. 4 23. 4 27. 4 29. 8 20. 6 17. 3 14. 7 13. 3 17. 2	Cents 31. 1 31. 5 29. 4 31. 4 33. 9 25. 3 19. 1 17. 2 16. 3 21. 9	Cents 37. 7 36. 8 35. 6 34. 9 38. 4 26. 5 22. 7 22. 5 20. 8 23. 7	Cents 46. 8 44. 9 41. 6 39. 6 44. 2 31. 7 26. 4 26. 1 24. 0 28. 6	Cents 48. 1 47. 6 43. 3 42. 9 45. 8 26. 8 25. 6 28. 1 21. 6 27. 0	Cents 30. 4 28. 8 25. 0 29. 9 23. 7 17. 5 14. 2 13. 8 17. 0

Bureau of Agricultural Economics. Based on returns from special price reporters. Monthly prices, by States, weighted by Census production 1919 to obtain the United States averages from 1925 through May 1932, and by 1929 census sales thereafter. Yearly prices obtained by weighting annual State averages by sales in each State. Data for earlier years in 1928 Yearbook, table 492.

Table 440.—Eggs: Average wholesale price per dozen at 5 markets, by months, specified years

									,				
Market, grade, and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
New York:													
Fresh firsts:	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents			Cents	Cents
1925	59	44	30	29	32	33	33	33	37	43	56	51	40
1926	38	31	29	32	31	30	29	31	38	40	50	48	36
1927	42	32	25	26	23	23	25	28	34	40	44	45	32
1928 1929	45 36	32 41	29	28 28	30	29	30	31	33	32	37	37	33
1929	30 42	35	33 26	28	31 23	31 24	32 22	34 25	36 25	40 26	48 31	51 29	37
1930	24	20	20	20	19	19	20	22	24	20	28	29	28
1931 1932	19	18	14	14	15	14	15	17	21	24	31	31	10
1033	23	14	14	13	14	13	15	14	18	20	26	22	17
1934	23 22	18	18	17	16	16	17	21	22	24	28	27	33 37 28 22 19 17 20
Chicago:											-		
Fresh firsts:		1	1	l	İ	i	ĺ	1	1	ł	1	l	I
1930	40	34	24	24	21	22	21	25	26	28	33	28	27
1931	21	16	19	17	17	16	18	19	20	24	29	24	27 20 18 16 19
1932	18	14	12	12	12	12	13	16	19	23	30	29	18
1933	21	12	12	12	13	12	14	13	16	19	23	19	16
	20	17	16	16	15	15	15	19	21	23	27	27] 19
Boston: Western firsts:	l		l]	1	l	l	ł	1	l	1	l	l
1930	44	37	26	26	24	24	22	25	25	26	34	90	20
1931	25	18	21	20	18	17	19	20	21	25	30	28 27	99
1932	19	17	14	14	15	14	15	18	21	24	30	32	20
1933	24	14	14	14	14	14	15	15	18	21	24	20	17
1934	23	21	18	17	17	17	17	21	23	24	28	27	39 22 20 17 21
Philadelphia:	,	l	1		1	1	ì	1	1	}	1		1
Extra firsts:	1				1	1 .	1	1	1	l		1	}
1930	46	40	28	28 21	26	27	28	32	33 26	36	44	32	33
1931 1932	28 23	20	22	21	19	21	24	24	26	29	34	31	25
1933	23	18	15 15	15 15	16	16	17	22	23	28	35	34	33 25 22 21 21 24
1934	25	22	19	19	16 19	15 20	19 20	18 24	22 28	26 27	32	28 33	21
San Francisco:	20		10	10	19	20	20	-44	1 40	24	33	50	24
Fresh extras:	1	1	1	1	ĺ	1	1	1	1	ł	1		1
1930	36	28	28	28	27	26	26	31	37	40	41	27	21
1931	22	19	20	20	20	20	22	26	31	38	33	29	25
1932	20	17	17	16	16	17	18	20	27	30	33	28	22
1933	24	15	16	16	17	18	19	21	26	29	29	28 24	31 25 22 21 21 22
1934	19	17	16	16	16	18	21	26	28	34	32	27	22
	<u> </u>	<u> </u>	1	1	1	ı		1	Į į	1		1	

Bureau of Agricultural Economics. Compiled from the Bureau of Labor Statistics wholesale-price bulletins, monthly, except prices for San Francisco, which are from the Pacific Dairy Review.

Table 441.—Eggs and egg products: International trade, average 1925-29, annual 1930-33

EGGS IN THE SHELL

•	Averag	e 1925-				Calend	ar year	•		
	19	29	19	30	19	31	19	32	193	3 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES Netherlands Union of Soviet So-	1,000 dozen 98, 429	1,000 dozen 8,965	1,000 dozen 124, 859		1,000 dozen 126, 689		1,000 dozen 117,667	1,000 dozen 401	1,000 dozen 83, 740	1,000 dozen 347
cialist Republics_ Poland Denmark China Irish Free State	76, 215 67, 641 56, 278 47, 058	0 493 225 0 449 1,419	14, 471 80, 999 71, 852 51, 360 47, 355 42, 926	163 50 52 0 106 1,703	30, 038 70, 687 81, 193 50, 944 46, 097 47, 778	100 2 0 0 103 713	10, 554 54, 971 92, 059 229, 657 38, 831 51, 860	185 1 0 2 207 80 601	2, 895 34, 547 89, 195 29, 555 34, 694 27, 569	121 40 0 126
Belgium Italy France United States Hungary Bulgaria	18, 026 17, 258	17, 969 11, 499 350 338 0	13, 701 23, 512 18, 579 19, 367 28, 239	33, 543 16, 422 317 205 0	13, 205 7, 854 7, 684 17, 609 32, 876	36, 213 35, 174 309 72 0	5, 692 1, 199 2, 319 9, 402 27, 637	51, 425 4, 759 244 16 0	1, 464 547 1, 866 16, 925 23, 031	12, 908 23, 129 251 51 0
Rumania Morocco Egypt Algeria Lithuania Sweden Union of South	14, 985 10, 879 5, 830 5, 313	0 6 17 0 679	24, 725 14, 629 8, 202 4, 233 4, 599 6, 543	0 0 19 0 628	19, 008 13, 828 10, 445 1, 898 5, 083 4, 289	0 0 46 0 1,971	23, 232 13, 773 16, 986 1, 233 3, 816 6, 477	1 0 0 8 107 0 293	14, 566 14, 231 1, 846 2, 400 4, 372	0 0 0 328
Union of South Africa Estonia Norway Finland	3,477	113 4 111 37	6, 158 2, 065 1, 056 636	47 1 114 12	6, 143 2, 197 1, 153 2, 771	90 0 134 1	5, 458 2, 066 2, 504 9, 211	28 0 76 1	4, 711 2, 007 2, 581 14, 662	5 0 88
Total	644, 286	42, 675	610, 066	54, 708	599, 469	75, 356	526, 604	68, 425	406, 904	39, 392
PRINCIPAL IMPORT- ING COUNTRIES										
United Kingdom Germany Spain Austria Japan Switzerland Argentina Cuba Philippine Islands Czechoslovakia Mexico British Malaya Canada Chile	591 15 1,730 0 13 1,518 0 0 1,828 0 1,828 1,365	238, 350 220, 035 34, 479 22, 033 20, 465 17, 132 9, 791 8, 793 4, 917 4, 202 3, 638 2, 244 67	715 159 12 1,942 0 99 969 0 2,622 0 270 189	264, 306 219, 909 39, 154 25, 869 8, 167 20, 221 14, 846 1, 314 6, 958 7, 936 4, 349 4, 341 2, 908	227 204 15 1,452 0 24 2,606 0 1,223 0 218 634	258, 729 193, 915 33, 370 25, 617 12, 142 23, 003 8, 318 55 10, 990 12, 136 87 3, 366 68 164	158 87 14 208 0 21 2,480 0 0 326 0 166 273 227	199, 332 197, 037 34, 218 16, 797 161 24, 752 1, 004 5 9, 899 11, 894 24 1, 588 40 0	39 14 246 0 3 2,690 0 4 3 201 1,988 365	183, 739 120, 958 55, 708 13, 181 44 22, 016 376 6, 932 17 1, 896 25
Total		592, 081	6, 906	620, 615	6, 614	581, 960	3, 960	496, 751	5, 553	404, 890

Preliminary.
 Does not include Manchuria after June 30, 1932.
 International Yearbook of Agricultural Statistics.

Table 441.—Eggs and egg products: International trade, average 1925-29, annual 1930-33—Continued

EGGS NOT IN THE SHELL

	Averse	re 1925–				Calend	ar year			
		29	19	30	19	31	19	32	193	31
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES ChinaYugoslaviaTurkey	1,000 pounds 128, 990 57, 955 23, 486	1,000 pounds 0 41 0	1,000 pounds 153, 304 67, 084 39, 403	1,000 pounds 0 7 0	1,000 pounds 132, 606 57, 997 54, 101	1,000 pounds 0 2 0	1,000 pounds ² 119,361 36, 356 54, 570	1,000 pounds 0 11 0	1,000 pounds 105, 981 40, 310	1,000 pounds 0 0
Total	210, 431	1	259, 791	7	244, 704	2	210, 287	11	146, 291	0
PRINCIPAL IMPORT- ING COUNTRIES United Kingdom United States Germany France Netherlands Canada Italy Belgium Irish Free State Sweden Czechoslovakia Austria Denmark Union of South Africa	464 2,098 238 860 0 16 216 19 5 13 8 7	65, 731 24, 914 18, 252 7, 375 4, 355 1, 700 1, 317 1, 1031 859 850 680 512	157 198 2,065 255 1,009 0 12 486 19 7 7	85, 630 16, 156 27, 231 13, 080 5, 588 1, 758 1, 854 1, 1073 1, 1073 1, 579 1, 290	111 255 1,908 188 865 0 9 1,665 23 0 15	83, 286 7, 661 21, 031 16, 608 4, 962 120 2, 690 1, 202 1, 126 1, 957 950 636	64 44 1,365 134 793 0 4 1,537 30 0 3 0	85, 326 3, 085 23, 840 6, 177 4, 094 117 2, 058 2, 373 1, 140 848 1, 609 939 524	0 49 1, 374 48 431 0 5 1, 184 0 0 0 5	70, 590 3, 664 10, 818 6, 898 4, 221 37 2, 370 2, 030 7144 860 621 469
Norway	0	11	0	22	0	20	2	21	0	13
Total	4, 558	128, 778	4, 264	158, 606	5, 045	144,989	3, 980	132, 159	3, 146	103, 513

Bureau of Agricultural Economics; official sources except where otherwise noted. In countries reporting other than dozens of eggs, the conversion factor used is $1\frac{1}{2}$ pounds equals 1 dozen.

Preliminary.
 Does not include Manchuria after June 30, 1932.
 2-year average.

STATISTICS OF FOREIGN TRADE IN AGRICULTURAL PRODUCTS

Table 442.—Summary of exports and imports, United States, 1909-10 to 1933-34

		Agricult	ural ex	ports 1		Agricul impor	tural ts ¹		1	Forest p	products	,
Year begin-	Total	Dome	stic		Total			Excess of agricul-	Exp	orts		
ning July	exports	Value	Per cent- age of total	Reex- ports	imports	Value	Per cent- age of total	tural exports	Do- mestic	Reex- ports	Im- ports	Excess of im- ports
1910-11. 1911-12. 1913-14. 1913-14. 1914-15. 1916-16. 1916-17. 1917-18. 1918-19. 1920-21. 1921-22. 1923-24. 1924-25. 1925-26. 1926-27. 1928-29. 1928-29. 1928-30. 1930-31.	1,000 dollars 1,710,084 2,170,320 2,128,506 2,716,178 4,272,178 6,227,164 5,838,652 7,949,309 6,385,844 3,699,909 3,886,635,884 4,773,32 4,773,155 4,773,155 1,732	1, 030, 7944 1, 050, 627 1, 123, 652 1, 113, 974 1, 475, 988 1, 518, 077 1, 475, 988 2, 280, 496 3, 579, 918 3, 861, 511 2, 607, 641 1, 915, 866 1, 976, 698 1, 867, 088 2, 280, 381 1, 81, 733 1, 81, 733 1, 81, 733 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 485, 907 1, 589, 652 1, 589,	51. 2 48. 4 47. 8 54. 8 35. 6 39. 1 50. 6 40. 8 51. 8 44. 2 47. 7 39. 2 40. 7 39. 2 40. 7 39. 38. 0 39. 4 40. 8 40	20, 573 17, 171 19, 652 20, 286 38, 222 45, 017 45, 420 44, 210 105, 587 128, 191 90, 739 94, 3589 48, 393 62, 719 64, 168 75, 162 77, 222 73, 391 63, 943 50, 677 128, 791 128, 791 14, 762 16, 762 1	1, 556, 947 1, 527, 226 1, 813, 008 1, 813, 008 1, 813, 008 1, 674, 170 2, 197, 884 2, 659, 355 2, 945, 655 3, 005, 723 5, 238, 352 3, 654, 456 2, 608, 075 3, 554, 037 3, 554, 037 3, 554, 037 3, 554, 037 3, 554, 037 3, 534, 137 4, 252, 024 4, 44, 877 24, 252, 024 4, 425, 024 3, 828, 97 1, 888 3, 848, 97 3, 848, 97 3, 848, 97	773, 116 988, 495 916, 633 1, 000, 409 997, 911 1, 349, 563 1, 520, 680 1, 520, 680 1, 330, 028 3, 410, 018 2, 060, 237 11, 371, 720 12, 077, 124 1, 371, 75, 365 12, 259, 777 2, 057, 163 12, 193, 868 12, 179, 046 11, 183, 054 11, 183, 054 11, 183, 054 11, 183, 054 11, 183, 054 11, 183, 054	50. 6 53. 7 50. 6 52. 8 60. 2 62. 0 62. 0 62. 0 62. 3 52. 6 53. 8 549. 8 552. 6 65. 4 549. 8 552. 6 653. 7 653. 8 654. 8 654. 8 655. 8	278, 251 179, 303 226, 670 133, 851 516, 249 213, 525 449, 213, 525 449, 214, 013 1, 755, 477 579, 684 638, 143	68, 919 87, 181 113, 275 1190, 049 141, 876 94, 115 129, 981 1162, 374 156, 187 162, 731 174, 599 178, 092 161, 743 97, 995 62, 270 146, 634	2,110 1,679 1,350 2,809 1,961 1,287 1,435 3,392 1,409 3,758 6,380 4,315 1,563 1,563 1,563 1,563 1,563 1,563 1,563 1,365	75, 010 71, 736 69, 581 82, 878 81, 162 79, 451 129, 580 122, 581 229, 091 225, 162 156, 843 229, 091 225, 162 234, 598 216, 712 227, 423 228, 645 238, 545 238, 545 238, 545 238, 545 247 215, 874 216, 712 227, 423 228, 645 238, 545 238, 545 247 219, 547 2104, 542	24, 675 57, 269 38, 900 15, 555 33, 662 79, 243 60, 413 102, 662 52, 775 69, 946 64, 912 39, 747 42, 000 46, 293 44, 037 41, 864 18, 612

Does not include forest products, but includes rubber now mostly a plantation product. Excess of exports

Bureau of Agricultural Economics.

Bureau of Agricultural Economics.

This table supersedes table 500 in the Yearbook of Agriculture, 1931; the value of total imports and exports has been given and the imports of rubber, unmanufactured, and similar gums have been deducted from the imports of forest products and added to imports of agricultural products, also reexports of rubber, unmanufactured, and similar gums have been deducted from reexports of forest products and added to reexports of agricultural products. Rubber, unmanufactured, and similar gums, includes: Balata, guayule, gutta-joolatong or jelutong or pontianak, gutta-percha, India rubber, crude, and India rubber scrap or refuse, fit only for remanufacture.

In the statistics of foreign commerce of the United States the Philippine Islands are treated as a foreign country. The statistics of foreign commerce include the trade of the customs districts of Alaska, Hawaii, and Puerto Rico with foreign countries, but do not include the trade of these Territories with the United States.

Excess of agricultural imports.

Preliminary.

Imports for consumption, 1933-34.

Table 443.—Agricultural products: Value of trade between continental United States and noncontiguous Territories, 1924-25 to 1933-34

	Puert	o Rico	Ha	waii	Ala	ska
Year beginning July	United States ship- ments to	Ship- ments to United States	United States ship- ments to	Ship- ments to United States	United States ship- ments to	Ship- ments to United States
1924-25 1925-26. 1926-27. 1927-28. 1928-29. 1928-30. 1930-31. 1931-32. 1932-33.	31, 466 28, 117 25, 062 18, 796	1,000 dollars 70, 190 70, 385 84, 061 82, 326 53, 333 75, 868 75, 390 67, 769 58, 992 66, 092	1,000 dollars 17,954 17,806 18,019 19,004 19,348 19,883 17,759 12,517 16,643	1,000 dollars 97, 430 105, 470 98, 600 110, 338 103, 653 98, 097 103, 119 92, 460 79, 993 87, 069	1,000 dollars 9,774 9,539 8,737 9,435 9,108 9,257 6,982 5,443 4,920 6,185	1,000 dollars 415 516 720 231 290 511 380 147 65

¹ Preliminary.

Table 444.—Agricultural products: Value of principal groups exported from and imported into the United States, 1931-32 to 1933-34

Year beginning July Domestic exports A rticle General imports 1931-32 1032-33 1933-341 1931-32 1932-33 1933-3412 1,000 1,000 ANIMALS AND ANIMAL PRODUCTS 1,000 1,000 dollars 1,000 1,000 dollars 2, 312 11, 435 371 dollars dollare dollars dollars dollars 4, 275 14, 293 1, 158 37, 412 5, 775 158, 479 12, 706 15, 211 Animals, live. 970 1, 370 4, 365 2 200 1,090 4, 291 Dairy products... 12, 582 8, 721 Eggs and egg products_____ Hides and skins, raw (except fur)____ 827 404 443 815 22, 984 3, 937 96, 483 2. 230 1,900 2, 477 54, 159 53, 376 64, 335 Meat and meat products_____ 66, 811 4,321 Silk, unmanufactured.... 102, 217 Wool and mohair, unmanufactured

Animal products, miscellaneous 24, 139 20, 054 34 5, 837 25 20 4, 521 9, 698 5, 580 10, 753 85, 550 66, 556 83, 772 249, 309 153, 319 219,008 VEGETABLE PRODUCTS 20, 412 149, 110 6, 435 Chocolate and cocoa_____ 322 229 285 18, 381 20, 222 1, 309 321, 960 2, 327 2, 410 438, 018 127, 452 9, 272 Coffee 1,607 128, 548 Cotton lint, unmanufactured.... 337, 595 5, 869 Linters 4. 259 1.694 9, 272 31, 196 21, 169 9, 893 73, 722 87, 809 5, 869 30, 492 7, 439 7, 876 45, 873 26, 349 339, 289 324, 287 65, 933 Total cotton, unmanufactured..... 442, 277 6, 435 6, 435 37, 825 12, 219 13, 491 66, 924 51, 925 3, 772 8, 903 115, 767 Fruits... 91, 684 106, 406 1, 028 78, 133 40, 223 Grains and grain products 40, 026 736 2, 667 17, 780 12, 762 14,774 2, 109 Seeds, except oilseeds_____ 1, 184 2, 688 7, 061 106, 783 1.839 3,828 3, 828 10, 325 123, 717 16, 469 24, 858 16, 616 66, 206 Spices. 133 152 106 Sugar, molasses, and sirups 2, 328 1, 403 2, 416 Tea
Tobacco, unmanufactured.
Vegetables and preparations.
Vegetable products, miscellaneous. 10,670 86, 281 99, 878 7, 920 32, 544 62, 823 21,004 8, 725 9, 173 6, 282 6, 017 18, 848 31, 178 12, 561 26, 775 458, 369 Total vegetable products..... 666, 595 523, 097 703, 487 584, 929 642, 754 Total animal and vegetable products. 752, 145 589, 653 787, 259 834, 238 611,688 861, 762 FOREST PRODUCTS 1, 536 1,382 11,949 29,500 2, 544 5, 339 15, 484 42, 176 6, 993 9, 186 24, 510 68, 460 1, 979 15, 781 47, 710 4, 685 10, 770 31, 699 13, 415 42, 247 Forest products, miscellaneous 5,072 3,803 57, 388 62, 270 46, 634 72, 915 104, 542 65, 543 109, 149 Total agricultural products..... 814, 415 634, 287 860, 174 938, 780 677, 231 970, 911

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1924-34.

¹ Preliminary.

² Imports for consumption.

Bureau of Agricultural Economics; compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1933 and 1934.

In the statistics of foreign commerce of the United States, the Philippine Islands are treated as a foreign country. The statistics of foreign commerce include the trade of the customs districts of Alaska, Hawaii, and Puerto Rico with foreign countries, but do not include the trade of these Territories with the United States

Table 445.—Index numbers of quantities of principal agricultural exports, United States 1909-10 to 1933-34

[1909-10 to 1913-14=100]

Year beginning July	44 com- modities	44 com- modities except cotton	Cotton fiber	Grains and grain products	Cattle and meat products	Dairy products	Fruits	Tobacco
1909-10 1910-11 1911-12 1911-13 1913-14 1914-15 1915-16 1915-16 1915-18 1917-18 1918-19 1919-20 1920-21 1920-22 1921-22 1922-23 1922-24 1924-25 1925-26 1926-27 1927-28 1927-28 1928-29 1928-30 1931-32 1931-32 1931-32 1931-32 1933-34	110 106 138 118 118 101 145 134 127 137 112 104 126 106 136	86 92 100 119 103 189 184 165 255 207 212 218 182 153 167 123 143 188 141 117 117 191 646	73 91 125 103 108 9 99 70 70 70 53 83 80 64 76 67 67 67 67 99 92 99 82 82 81 103 103 108	82 85 78 143 112 302 307 217 179 272 218 329 329 346 143 225 117 188 188 174 41 130 104 42 42	91 104 115 97 92 126 164 187 187 185 154 153 169 179 140 114 98 98 102 104 74 63 63 63	58 93 126 120 103 302 479 716 976 1, 287 1, 275 524 671 406 451 396 327 288 243 221 120 122 74	76 89 101 136 98 119 109 101 111 122 108 105 121 214 211 301 258 372 216 337 337 337 337 347	91 90 97 107 114 89 113 105 74 160 165 129 118 116 152 110 137 132 125 144 153 150

Bureau of Agricultural Economics. Computations are based on the gross exports of 44 of the most important farm products. The index numbers were calculated as follows: Quantities of various commodities exported each year were multiplied by the average yearly export prices of these commodities from July 1909 to June 1914. The sum of the values determined in this way was then divided by the average yearly value of exports from 1909-10 to 1913-14 to obtain the index.

Table 446.—Exports and imports of selected forest products, 1909-10 to 1933-34

•		Don	nestic exp	ports				Imports		
	Lun	1ber					Lun	ber '	1	
Year beginning July	Boards, deals, and planks	Staves	Rosin	Spirits or tur- pen- tine	Tim- ber, sawed	Cam- phor, crude	Boards, deals, planks, and other sawed	Shin- gles	Shellac	Wood pulp
1909-10 1910-11 1911-12 1911-13 1913-14 1913-15 1915-10 1916-17 1917-18 1918-19 1918-19 1919-20 1920-21 1921-22 1922-23 1923-24 1924-25 1925-28 1925-28 1926-27 1927-28 1928-29 1928-29 1928-29 1928-29 1929-30 1930-31 1931-32 1931-32 1933-34 1933-34	2, 357 2, 405 1, 129 1, 177 1, 042 1, 073 1, 518 1, 549 1, 549 1, 985 2, 318 2, 387 2, 387 2, 486 1, 842	Thou- sands 449,784 465,726 664,163 869,77,151 757,558 61,469 63,207 62,753 35,162,753 35,162,754,826 76,466 774,826 778,466 47,207 74,826 78,466 82,469 82,474,827 83,483 23,33,33,33,33,33,33	1,000 barrels 2,148 2,190 2,474 2,806 2,418 1,571 1,639 1,071 1,639 1,040 1,209 1,300 1,1412 1,300 1,300 1,306 1,156 1,157	1,000 gallons 15,584 15,589 11,599 121,094 18,901 9,310 8,849,310 10,786 10,742 11,130 11,30 11,30 11,30 11,30 11,30 11,30 11,5722 13,252 11,2720 11,2720	1,000 M feet 491 1532 438 5112 4441 174 1106 92 234 123 268 383 815 586 652 707 825 171 1711 657 406 319 3206	1,000 pounds 3,007 2,726 2,155 3,709 3,477 4,574 6,888 2,623 4,574 6,688 2,623 1,904 1,904 2,616 2,175 2,704 5,177 1,248 1,777 1,248 1,777 1,248 1,777 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,548 1,777 1,548 1,548 1,777 1,548 1,548 1,548 1,777 1,548 1,548 1,548 1,777 1,548 1,548 1,777 1,548	1,000 M feet 1,054 1,051 1,001 9239 1,218 1,175 1,253 923 1,124 1,178 1,	1,000 M 763 515 560 895 1,769 1,767 1,767 1,878 1,757 2,483 1,152 2,483 2,487 2,483 2,487 2,483 2,487 2,483 2,487 2,483 2,487 2,483 2,487	1,000 pounds 29, 402 15, 495 18, 746 21, 912 16, 720 24, 153 25, 818 32, 548 22, 913 14, 269 30, 768 32, 773 28, 512 21, 436 22, 188 32, 773 28, 512 21, 436 31, 548 32, 773 28, 512 11, 548 3	1,000 long tons 378 492 478 502 508 507 699 504 475 727 624 902 1, 529 1

¹ Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1909-18, and Monthly Summary of Foreign Commerce of the United States, June issues, 1919-34.

Table 447.—Exports of selected domestic agricultural products, annual 1909-10 to 1933-34

Year begin- ning July	Butter	Cheese	Milk, con- densed and evapo rated	she	ne l'inc	rod-	Pork fresi		Pork, pickled	Bace include Cum land	ling ber-	Hams and shoul- ders, in cluding Wilt- shire sides		Lard, pure
1909-10 1910-11 1911-12 1912-13 1913-14 1914-15 1916-16 1916-17 1917-18 1918-19 1912-22 1922-23 1922-23 1922-23 1922-23 1922-25 1922-25 1922-25 1922-25 1922-29 1922-29 1923-24 1924-25 1925-26 1926-27 1927-25 1928-29 1929-30 1930-31 1931-32 1932-33 1933-34	4, 878 6, 679 3, 586 3, 685 13, 487 26, 835 17, 736 33, 745 6 7, 829 7, 512 9, 410 5, 425 5, 280 5, 948 3, 778 3, 578 2, 293 1, 578	1,000 pounds 2,847 10,363 2,599 2,428 55,363 44,303 18,792 19,373 10,826 7,471 8,446 3,938 9,388 9,47 9,47 10,826 10,826 10,826 10,826 10,826 10,826 11,346 11,346 11,253	1,000 pound 13, 31 12, 18 20, 64 16, 52 16, 20 37, 23 159, 57 259, 14 528, 75 728, 74 708, 46 262, 66 277, 31 157, 03 213, 61 173, 54 112, 49 101, 57 78, 98 65, 62 40, 01 38, 08	1	72 200 200 200 200 200 200 200 200 200 2	nds , 110 , 455 , 952 , 913 , 180 , 180 , 124 , 124 , 694 , 124 , 694 , 189 , 149 , 189 , 149 , 685 , 685 , 394	1,000 pounn 1, 03 2, 55 2, 44 2, 66 3, 90 63, 00 50, 43 19, 66 27, 20 25, 97 49, 11 127, 68 11, 0, 68 11, 0, 6 11, 0, 6 11, 0, 6 11, 0, 2 8, 11 28, 2	ds 740 440 4555 441 444 444 444 444 444 444 444 44	1,000 pound. 40, 032 45, 722 45, 722 56, 321 53, 744 55, 543 45, 655 63, 461 33, 282 33, 292 27, 966 33, 610 43, 910 43, 910 44, 647 45, 655 63, 461 64, 693 63, 693 63, 910 63, 910 64, 926 62, 926 6	152 156 208 200 193 346 579 615 815 1, 238 803 350 423 423 423 423 126 127 127 128 129 129 129 129 129 129 129 129 129 129	nds , 163 , 675 , 574 , 994 , 964 , 718 , 809 , 152	1,000 pounds 146, 888 57, 709 204, 044 165, 882 203, 701 252, 209 266, 657 449, 577 667, 244 297, 149, 577 687, 244 291, 211 271, 642 381, 566 292, 214 143, 644 1127, 810 1125, 399 1130, 318 99, 744 \$ 69, 338 \$ 69, 338 \$ 71, 211 71, 488	1,	1,000 lounds 362, 928 476, 198 532, 256 532, 256 539, 256 481, 458 447, 532 447, 532 447, 532 427, 011 587, 225 587, 225 587, 225 746, 157 812, 379 952, 645 695, 445 695, 445 675, 812 787, 166 585, 670 542, 639 542, 699 546, 997
Year beginning July	Beef and its prod- ucts, total 5	Oleo oil	Cotton lint 6	Arc 6	Cotton- seed cake and meal	Lins cal an me	ke d	Prui	nes	Raisins	Ap- ples fresi	, App.		Apri- cots, dried
1909-10 1910-11 1911-12 1912-13 1913-14 1914-15 1916-17 1916-17 1918-19 1919-20 1920-21 1921-22 1922-23 1923-24 1925-28 1926-27 1926-28 1927-28 1928-29 1930-31 1931-32 1931-32 1932-33 1933-34	1,000 pounds 286, 296 265, 924 233, 925 170, 203 394, 991 457, 556 600, 132 591, 302 358, 002 203, 815 222, 462 194, 912 185, 081 190, 366 152, 320 151, 535 101, 303 106, 595 101, 303 98, 379 79, 482 74, 000 78, 711	1,000 pounds 126,092 138,697 126,467 92,857 80,482 102,646 67,110 56,603 59,292 74,52,603 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 105,145 90,410 92,720 93,965 105,145 90,410 92,720 93,965 105,145	1,000 bales 6,413 8,088 11,070 9,152 8,581 5,917 5,702 4,455 5,570 6,592 5,578 4,455 5,578 8,110 11,281 17,890 8,520 7,048 8,989 8,989 8,647 8,366	226 251	1,000 pounds 640, 089 804, 597 1, 293, 690 1, 128, 092 799, 974 1, 479, 065 1, 147, 9, 065 1, 147, 9, 067 1, 222 1, 150, 160 44, 681 311, 624 449, 573 1454, 350 250, 366 885, 375 718, 505 990, 516 664, 523 571, 200 388, 240 87, 380 302, 490 147, 840	484, 574, 560, 691, 589, 625, 606, 645, 624, 304, 443, 241,	788 317 115 120 889 794 916 984 400 788 336 612 1126 166 121 304 120 960 640 5520	1,000 pour 1,000 pour	nds 1 1 1 1 1 1 1 1 1	1,000 000unds 8,526 18,660 19,949 28,121 14,766 24,845 75,015 51,993 54,988 84,150 96,887 24,492 49,639 93,962 88,152 90,783 135,027 152,337 193,099 221,766 122,697 123,100 122,100 122,100 122,130 122,130 122,130 122,130 123,100 123,100 124,845 125,100 125,100 126,100 127,100 127,100 128,697 128,697 128,954	1,000 barree 92 1,72 1,45 2,15 1,50 2,35 1,46 3,1,77 1,09 3,22 3,67 7,00 3,14 7,01 3,44,08 4,08	ls pour 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1018 1018 1018 1018 1018 1018 1018 1018	1,000 pounds
1 Include	harren z	fresh s	alted o	nickle	d nork. Is	מ היי	entrel	lerd	i lard	oil her	າດກຸຊ	nd ham	· w	filtchira

Includes canned, fresh, salted, or pickled pork, lard, neutral lard, lard oil, bacon, and hams, Wiltshire and Cumberland sides.
 Includes "Wiltshire sides," beginning January 1932.
 Wiltshire sides included with "Bacon."

⁴ Preliminary.
4 Includes canned, cured, and fresh beef, oleo oil, oleo stock, oleomargarine, tallow, and stearin from animal fats.

6 Bales of 500 pounds gross; lint cotton and linters not separately reported prior to 1915.

Table 447.—Exports of selected domestic agricultural products, annual 1909-10 to 1933-34—Continued

Year begin- ning July	Or- anges 7	Apri- cots, canned 8	Pears, canned ⁸	Peaches, canned 8	Pine- apples, canned	Grapes	Pears, fresh ⁸	Grape- fruit, fresh	Starch, includ- ing corn- starch	Corn- starch 9
	1,000 boxes	1,000 pounds	1,000 Dounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 boxes	1,000 pounds	1,000 pounds
1909-10	932					20000			51,536	
1910-11	1,179	pounas							158, 239	
1911-12	1, 197								83, 645	
1912-13	1,063								110,898	
1913-14	1,759					-			76, 714 107, 037	
1015-16	1,575								210, 185	
1916-17	1,850								146, 424	
1917-18	1,240								73, 883 143, 788	38, 659
1918-19	1,402					-			143, 788	105, 727
1919-20	1,619					-			237, 609	163, 315
1920-21	2,001 1,641			1		10 173		10140	135, 365	110, 514
1921-22	1,799	10 13, 809	49, 358	54, 624	21, 848	14,022	36. 785	252	386, 873 260, 796	348, 940 254, 060
1923-24	2, 592	26, 576	38. 431	50. 374	21, 848 25, 238	20, 257	36, 785 50, 237	305	262, 842	255, 135
1924-25	2, 197	26, 576 31, 360	53, 851	57, 390	1 26, 252		41, 452	427	262, 842 214, 247	209, 865
1910-11 1911-12 1912-13 1913-14 1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1922-23 1922-23 1923-24 1924-25 1926-27 1927-28 1928-29 1929-30	2, 197 2, 253 3, 340	29, 547	38, 431 53, 851 75, 876 66, 104	54, 624 50, 374 57, 390 83, 160 81, 896	37, 543 37, 426	24, 268 30, 791 38, 819	41, 452 71, 205	379	224, 569 233, 111	208, 463
1926-27	3,340	35, 896	66, 104	81,896	37, 426	30,791	1 73, 877	613	233, 111	212, 375
1927-28	2, 988 4, 223	29, 013	1 02.071	86, 634 101, 438	51, 227 47, 533	55, 638	51, 056 82, 847 62, 024	719 940	281, 388 235, 660	275, 921 231, 667
1920-29	3, 674	26, 249 33, 235	82, 652 54, 709	74, 470	46, 309	46, 158	62, 024	854	203, 343	200, 558
1930-31	3, 984	19, 024	74, 355	75, 763	35, 308	49, 799	134, 670	1, 222	104, 807	102,886
1931-32	3,534	23, 161	71, 570	74, 470 75, 763 66, 300	20, 920	27,613	134, 670 90, 702	1,202	73, 071	71,927
1932-33	3, 391	19, 504	60, 762	74,999	15, 923	29,352	1119, 987	902	52, 969	52, 350
1929-30 1930-31 1931-32 1932-33 1933-344	3, 449	24, 315	78, 384	81, 464	21, 831	26, 689	111, 008	946	73, 922	73, 377
Year begin- ning July	Barley, includ- ing flour and malt ¹¹	Corn, includ- ing corn meal	Oats, includ- ing oat- meal	includ- ing flour, meal, and broken rice	Rye, includ- ing flour	Wheat, includ- ing flour	To- bacco, un- manu- fac- tured 12	Glu- cose and grape sugar	Hops	Sugar, raw and re- fined 13
1909-10. 1910-11. 1911-12. 1912-13. 1918-14. 1918-16. 1916-17. 1918-19. 1919-20. 1920-21. 1922-23. 1922-24. 1922-23. 1923-24. 1925-26. 1925-27. 1927-28. 1928-27. 1927-28. 1928-30. 1930-31. 1931-32. 1932-33.	1,000 bushels 4,45,507 1,655 17,874 6,945 28,712 20,319 20,319 21,255 27,255 27,255 27,255 27,255 39,274 60,295 39,274 60,295 61,1443 11,443 15,469 9,391	1,000 bushels 38, 128 65, 618 50, 628 50, 688	1,000 bushels 2,549 3,846 2,675 36,455 2,749 100,609 95,109 109,005 43,436 44,438 44,4	1,000 pounds 7,050 15,578 26,798 26,798 223,75,449 120,695 181,372 196,363 198,128 440,855 541,509 227,757 48,175 304,358 309,788 309,788 309,788 309,788 309,788 309,788	1,000 bushels 243 40 1,855 2,273 15,250 13,703 17,186 36,467 41,531 47,337 29,944 47,337 29,944 51,663 50,245 20,265 20,265 21,697 22,888 22,488 22,488 24,488 24,488 24,488 26,488 26,488 27,488 28,4	1,000 bushels 89, 173 771, 338 81, 815 145, 195 145, 195 145, 195 335, 702 246, 221 205, 962 132, 579 287, 402 224, 900 132, 579 282, 586 224, 900 159, 833 108, 035 219, 180 206, 259 163, 685 131, 475 131, 797 41, 211 37, 001	1,000 pounds 357, 196 355, 196 379, 845 449, 750 348, 346 443, 293 411, 599 289, 171 629, 288 648, 038 506, 526 443, 384 597, 630 443, 389 996 565, 925 600, 181 591, 035 432, 361 899, 967	1,000 pounds 149,820 181,963 171,156 200,149 199,531 158,463 186,406 214,973 97,888 136,230 245,246 245,246 141,954 127,392 173,952 173,952 174,951 17	14, 263 16, 210 22, 410 4, 825 3, 495 7, 467 30, 780 22, 252 13, 497 20, 461 16, 122 14, 998 13, 369 6, 793 6, 793 5, 593 3, 31, 24, 431	1,000 sh.tons 328 40 226 276 815 6225 288 722 290 1,001 376 1135 251 106 128 79 70 41 660
	<u> </u>	2, 505	1, 100		<u> </u>				<u> </u>	1
4 Prelimin	0277			,	1 Tradude	s barley	HATTE TOTA	1_99 Ro	riev flour	TOL

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1909–18, and Monthly Summary of Foreign Commerce of the United States, June issues 1919–34. Conversion factors used: Corn meal, 1 barrel=4 bushels corn; oatmeal, 18 pounds=1 bushel cats; rye flour, 1 barrel=6 bushels rye; malt, 1.1 bushels=1 bushel barley; wheat flour, 1 barrel=1909–17, 4.7 bushels grain; 1918 and 1919, 4.5 bushels; 1920, 4.6 bushels; 1921–34, 4.7 bushels; apples, 3 boxes=1 barrel. The unit "1,000 pounds" in the columns of canned goods is presumed to be net weight, according to Government regulations.

⁴ Preliminary.
⁷ Converted to boxes of 78 pounds.
⁸ Given in value only prior to 1922-23.
⁹ Included with "Starch" prior to 1917-18.
¹⁰ Jan. 1 to June 30.

Includes barley flour 1919-22. Barley flour not separately reported prior to 1919 nor since 1922.
 Includes "Stems, trimmings, and scrap tobacco."
 Includes maple sugar, 1919-34.

Table 448.—Imports of selected agricultural products, annual 1909-10 to 1933-34

Year be- ginning July	Butter	Cheese	Milk, fresh ¹	Cream, fresh ²	Beef and veal, fresh	Beef, corned ³	e	Cattle ixeludir and i	ng calf		et- ins	Total hides and skins (except furs)	Wool, unman- ufac- tured, includ- ing mo- hair, etc.
1909-10 1910-11 1911-12 1913-14 1914-15 1915-16 1916-17 1916-17 1917-18 1918-19 1918-19 1920-21 1922-23 1922-24 1922-25 1923-24 1924-25 1925-29 1925-29 1925-29 1926-27 1927-28 1928-29 1928-2	7, 842 3, 828 1, 806 4, 131 20, 771 34, 344 9, 551 15, 772 29, 466 10, 710 4, 955 3, 299 1, 329 1, 329 1, 339 1, 339 1, 329 1, 838	1,000 pounds 40, 818 45, 569 46, 549 49, 388 63, 784 50, 139 30, 088 14, 482 9, 839 24, 271 54, 555 62, 412 89, 782 75, 424 606 78, 261 55, 201 55, 201 55, 201 55, 201 55, 201 56, 201 57, 235 57, 235 57, 201 56, 201 57, 20	2, 592 3, 989 4, 891 4, 536 5, 148 6, 623 6, 418 7, 479 6, 106 5, 425 5, 314 1, 190 280	1,000 galtons 732 2,333 1,120 1,247 1,773 2,077 1,194 712 (6) (6) (7) 1,646 4,768 4,768 4,819 3,173 2,474 4113 52 25	1,000 pounds 	1,000 pounds 127,136 1,434 3,434 1,69 2,393 10,060 14,973 32,158 38,617 73,191 82,480 22,483 32,549 39,543	9 177 18 20 24 22 19 22 17 18 18 14 14 22 22 22 19 22 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	,000 s 318, 318, 5, 498 15, 498 15, 4478 16, 839 15, 478 16, 839 15, 363 16, 613 16, 6	1,000 pounds 004 54,60 131 182,595 71,485 93,001 183,237 76,655 33,182 2111,252 248,484 438 58,710 114,506 11,287 26,461 113,859 10,530 10,530 3,745	pout 115, 86, 95, 96, 84, 66, 100, 105, 66, 89, 126, 41, 83, 89, 65, 65, 86, 83, 84, 94, 101, 80, 754,	845 914 341 250 759 547 657 640 933 005	1,000 pounds 608, 619	1,000 pounds 283, 928 137, 648 139, 401 195, 293 247, 648 253 308, 083 554, 822 379, 130 4422, 415 427, 578 318, 236 255, 087 625, 473 229, 122 271, 128 248, 035 270, 937 220, 457 103, 941 176, 988
Year be- ginning July		Cotton, unman- ufac- tured 10	Silk 11	Tobac- co, un- manu- fac- tured	Rubbe and similar gums, crude	Coffe	e	Теа	Cocc or cacs bear		Sugar raw and refine	Mo- lasses	Olives, green or in brine
1909-10 1910-11 1911-12 1912-13 1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 192-21 1922-22 1923-24 1924-25 1923-27 1924-25 1925-20 1926-27 1927-28 (928-20) 1927-28 (928-20) 1931-32 1931-33 1931-33 1933-34	137,220 3,583 2,404 6,463 6,647 2,204 3,134 1,073 474 0		1,000 pounds 23,457 26,666 26,585 32,101 34,546 31,053 41,925 40,351 41,925 40,351 41,925 40,351 41,925 40,689 58,410 56,595 70,68 85,162 87,128 87,128 87,128 87,128 87,661 87,661 82,566 66,546	1,000 pounds 46, 853 48, 203 48, 203 48, 203 48, 078 49, 105 86, 991 94, 005 86, 991 94, 005 86, 991 94, 005 87, 76, 870 89, 974 92, 983 81, 045 79, 284 65, 425 73, 375 75, 786 55, 785 76, 785 77, 785 78, 785 78, 785 78, 785 78, 785 78, 785 78, 785 785 785 785 785 785 785 785 785 785	1,000 pound. 164, 62 145, 74 145, 79 1175, 96 1170, 74 161, 77 196, 12 364, 91 442, 21 660, 61 371, 37 578, 51 810, 02 683, 44 824, 42 962, 66 983, 27 999, 22 1, 262, 11 1, 167, 81 1, 168, 71 1, 168, 71 1, 1789, 11	11 871.4 4 875.8 66 885.7 77 1,001.1 22 1,118.6 31.201.1 4 1,139.1 4 1,143.1 55 1,046.1 1,148.1 1,149.	ds 170 167 167 167 167 167 167 167 167	1,000 pouna 85, 62 102, 56 101, 40 94, 81 91, 13 96, 98 103, 36 151, 31 108, 17 97, 82 72, 19 86, 14 92, 77 99, 41 92, 63 86, 36 87, 14 90, 45 94, 80 87, 69	Second S	ds 668 558 669 668 607 607 607 608 607 608 607 608 608 609 609 609 609 609 609 609 609	1,000 short tons 2,047,1,969,2,052,2,052,2,710,2,533,3,506,4,4,367,3,768,4,4,752,644,4,752,644,752,2,951,2,9	1,000 gallon 31, 293 23, 833 32 24 28, 822 33 392 45 14 10, 70, 844 7 85, 71 10, 232 31 130, 73 6 154, 67 6 154, 67 7 10, 256, 24 10, 20, 256, 24 10, 256, 256, 24 10, 256, 256, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 24 10, 277, 00, 256, 277, 277, 277, 277, 277, 277, 277, 27	2 4,555 3 3,045 3 3,045 3 3,045 3 3,045 5 3,045 6 3,045 6 4,054 6 4,054 6 4,054 6 6,955 6 6,955 6 6,955 6 6,955 6 7,057 7 7 6,848 8 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

¹ Included with condensed and reported in value only prior to 1918-19. Includes cream, fresh 1918-19 to 1923-24. Beginning 1924-25 reported as milk, sweet, sour, and buttermilk.

2 Included in "all other articles" prior to 1909-10.

3 Reported in value only prior to 1918-19. Figures are imports for consumption and include corned beef, 1913-14 to 1924-25.

4 Wet salted over 25 pounds.

5 Dry salted over 12 pounds.

6 Not separately classified.

7 Beginning Jan. 1, 1924; 6 months' figure.

8 Freiminary.

9 Imports for consumption beginning 1933-34.

16 Bales of 478 pounds net.

16 Includes "silk, raw or as reeled from cocoon," "silk waste", and "silk cocoons."

17 Reported in value only.

18 Beginning Sept. 22, 1922.

Table 448.—Imports of selected agricultural products, annual 1909-10 to 1933-34-Continued

					_		_											
Year beging July	ing	Bar		Le		Bea		Oni	ons	Ton toe free	s,	mo i ter	ll- nds n ms of led ¹⁵	te	Pea- luts in erms of lled 15	Wal- nuts in terms of shelled 15	Copra 16	Flax- seed
1909-10. 1910-11. 1911-12. 1912-13. 1912-14. 1914-15. 1915-16. 1916-17. 1917-18. 1918-19. 1919-20. 1921-22. 1921-22. 1922-23. 1923-24. 1924-25. 1928-27. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1928-29. 1938-31.		38, 44, 44, 42,	ches 157 699 521 357	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	res 165 824 968 046 2)	bus, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	000 hels 015 000 hels 015 000 hels 015 000 hels	1,1,1,1,1,2,1,1,2,2,2,2	hels 024 515 436 789 115 829 816 758 313 152 884	1,00 pour 	nds 	702 188 155 177 13 155 13 144 199 20 255 288 155 24 24 22 21 19 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	000 000 000 000 000 000 000 000	2 1 1 1 1 3 3 7 7 2 1 2 4 4 4 4 5 5 9 3 4 4 6 6 3 3 1 1	,000 ,000	1,000 pounds 33, 641 33, 619 33, 619 417, 213 20, 800 22, 783 916, 252 961 15, 902 25, 783 36, 623 36, 623 36, 623 36, 623 37, 76 20, 220, 347 20, 547 30, 65, 682	1,000 grounds 21,306 37,817 64,581 34,268 45,437 90,547 110,078 2247,036 486,996 301,965 218,522 192,246,722 386,100 299,774 328,652 392,759 454,546 456,158 629,937 445,456 456,158 456,158 456,558,397 455,454 454,842 456,158 456,558,397 455,539 454,546 456,548 4	1,000 bushels 5,002 10,499 6,842 10,666 14,679 12,394 13,367 8,427 23,392 16,170 13,632 25,006 19,577 13,419 19,354 24,224 18,112 23,494 19,652 7,813 13,850 6,213 11,901
Year begin ning July	ju ju bu ui ui	id.	Ma o aba	r	ar he		Eg wh in sh	ole,	gnd dr fro or ps	ggs l egg lks, ied, zen, pre- ired	eg dr.	ole gs, ied	Who egg	s, en	Yolks dried	frozen	men, dried	Egg al- bumen, frozen, pre- pared, and pre- served
1909-10. 1910-11. 1911-12. 1912-13. 1913-14. 1914-15. 1915-16. 1916-17. 1917-18. 1918-19. 1919-20. 1920-21. 1921-22. 1922-23. 1923-24. 1925-26. 1925-26. 1925-27. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28. 1925-28.	lo	000 ng ns 68 65 101 125 106 83 113 78 65 77 90 62 85 84 49 52 38 60	1,C	ng ns 93 74 50 77 86 87 77 86 87 77 86 87 72 44 88 87 82 82 82 82 82 82 82 82 82 82 82 82 82	io to	000 ng ns 100 1118 1216 1229 143 150 153 176 124 135 113 146 124 135 116 116 116	1, 6, 3, 1, 1, 3.	000 zen 367 015 047 110 619 848 348 224 535 426 226 226 2198	17 14	000 unds 228 3, 420 5, 572 6, 022 6, 318 8, 598 6, 091 8, 768 8, 768 8, 1091 8, 821 8, 830	1, 1, 1, 1,	544 884 305 132 575 133 839 822 543 19	7 1, 1 8, 7 12, 6 8, 1 12, 6 9, 8	06 51 47 14 11	1,000 pound 7,522 4,28 6,00 4,46 3,48 5,13 7,81 6,06 1,72 1,59 1,80	2 7 1, 21(1 1 4, 15, 66: 4 5, 66: 8 4, 60: 1 , 22: 0 4, 58: 9 3, 47: 9 1, 05: 0 44: 5 40:	3, 213 6, 642 3, 257 2 4, 490 1 3, 859 9 2, 361 1 2, 898 4, 363 2 2, 219 2 2, 219 3 1, 722	7 636 1,100 1,000 1,106 5,119 3,967 553 610 985 20 0

Not separately classified.

Not separately classified.
Beginning Jan. 1, 1924; 6 months' figure.

Preliminary.
Imports for consumption beginning 1933-34.
Beginning Jan. 1, 1924; 6 months' figure.

Preliminary.
Imports for consumption beginning 1933-34.
Boxes of 74 pounds.
Conversion factors used: almonds, 30 percent unshelled equals shelled; peanuts, 3 pounds unshelled equals 2 pounds shelled; wainuts, 42 percent unshelled equals shelled.
Reported as "coconut meat broken, or copra, not shredded, desiccated or prepared" 1909-10 to 1921-22; 1922-23 to 1924-25 reported as "copra, not prepared," 1925-26 to date reported as "copra."

July 1-Dec. 31, 1923.
Bureau of Agricultural Economics: compiled from Commerce and Newigation of the United States.

Bureau of Agricultural Economics; compiled from Commerce and Navigation of the United States 1909–18, and Monthly Summary of Foreign Commerce, June issues, 1919–34.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926–27 to 1933–34

States, 0	y cours	,,,,,,						
			Y	ear ende	d June 3	0		
Article and country to which exported	1926-27	1927–28	1928-29	1929-30	1930-31	1931–32	1932-33	1933-341
ANIMAL PRODUCTS Butter:	1,000 pounds 0	1,000 pounds 20	1,000 pounds 5	1,000 pounds 20	1,000 pounds 80	1,000 pounds	1,000 pounds 1	1,000 pounds
United Kingdom Honduras Panama Mexico	150	143	157	164	151	(2) 139	108	(2) 72
Panama	582	311	227 672	342 617	157 426	135 179	369 128	206
Mexico	859 734	724 479	370	96	16	9	1	161
Haiti, Republic of	498	479	479	458	394	401	291	208
Mexico. Cuba. Haiti, Republic of Other West Indies 3. Colombia. Peru. Venezuela. Philippine Islands. Other countries.	550 163	391 143	394 164	380 122	270 61	244 23	214 12	186 18
Peru	356	358	451	371	67	57	14	8
Venezuela	381 187	190 190	264 152	329	269 154	119 84	45 83	38 383
Other countries	588	537	443	473	258	188	120	135
m-+-2	5,048	3, 965	3,778	3, 582	2, 293	1, 578	1,386	1, 416
Total	3,045	3, 903	0,110	0,002	2, 233	1,010	1,000	1, 410
Cheese:	434	432	460	485	442	535	640	505
Panama Mexico Canada	670	581	423	506	293	133	69	108
Canada	350 68	259 69	170 82	176 105	179 86	84 73	44 50	66 31
British Honduras	67	72	76	64	61	52	25	12
Cuba	832 62	359 65	405 70	170 65	72 54	143 62	56 59	59 65
Haiti, Republic of	86	80	72	58	59	51	1 26	26
Other West Indies	331	186	218	129	94	69	72	28 110
China Philippine Islands	252 110	145 146	89 130	45 134	29 143	39 158	36 150	89
Canada. Honduras British Honduras Cuba Virgin Islands. Haiti, Republic of Other West Indies China Philippine Islands. Other countries.	511	479	377	402	221	165	119	154
Total	3,773	2,873	2, 572	2, 339	1,733	1, 564	1,346	1, 253
Milk:								
				-	١.,	1		
Cube	424 12,843	151 11, 462	13, 103	13, 196	3,651	1, 378	31 360	5
Philippine Islands	6,471	7,575	13, 103 7, 339	13, 196 7, 347 4, 701	7, 566	1,378 5,817	1,382	2, 625
Japan Tong	4,029	5,385 3,764	5, 473 3, 739	4,701	4, 167 2, 372	3, 543 2, 339 886	1 225	(2)
Chira	2,065 3,621	2, 513	2,840	3, 905 2, 173	1,319	886	1,325 699	12
Mexico	1,308	985	883	1,055	605	281	224	219
Jamaica	754 319	467 402	523 549	380 550	612 515	595 384	1,073 282	1,077 261
Costa Rica	566	595	746	524	370	208	129	115
Condensed: Total Europe. Cuba. Philippine Islands. Japan. Hong Kong. China. Mexico. Jamaica. Honduras. Costa Rica. Venezuela. Other countries.	369 3,030	439 3, 237	550 3,750	480	452 1,291	298 805	176 666	133
		 		3, 439				724
Total	35, 799	36, 975	39, 565	37, 771	22, 934	16, 540	6, 347	5, 175
Evaporated:	27, 418	99 905	01 750	11 077	15 070	15 007	926	7 000
United Kingdom Other Europe	3, 109	23,805 596	21, 759 508	11,877 457	15, 978 367	15, 287 218	31	1,038 72
		24, 401	22, 267	12 334	16 345	15, 505	957	1, 110
Total Europe Philippine Islands Panama Peru	12,806 4,127 4,215	15, 563 3, 589 3, 569	22, 267 16, 372	17, 153	16, 345 18, 684	16, 279 4, 308 1, 355	19,598	16.920
Panama	4, 127	3,589	4, 606 4, 027	4,805	2,898 1,583	4,308	4,616 242	1 4,086
China	3,025	3,035	3, 447	2,056	816	529	555	830 747
British Malaya	1,932	2 817	1 9 761	3, 359	1,026	592	648	526
Cuba	2,958 1,616	2, 647 2, 466	2, 272 2, 544 2, 185	2,935	486 2 867	207 2,446	179 184	287 196
Mexico.	2,714	1 4,101	2, 185	2, 274	2,867 1,296	685	700	907
China British Malaya Cuba Japan Mexico Netherland West Indies Netherlands Indies	672	834	1 1.488	12, 334 17, 153 4, 805 3, 602 2, 056 3, 359 2, 935 2, 785 2, 785 1, 765 1, 991	988	1, 235	1,373 879	1,033
		1,389 1,426	1, 422 1, 119	1, 991	1,772 748	1,256 1,242	579 1,847	818 1,848
Newfoundland and Labrador Other countries	797	1, 103	1,035	966	970	808	503	561
Other countries	5, 927	6, 972	7, 349	6, 413	5, 573	2,636	1,405	2, 533
Total	73, 143	71,968	72, 894	63, 801	56,052	49,083	33,666	32, 913
				-			-	

¹ Preliminary

² Less than 500.

² Excludes Bermudas

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

Biales, by count	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Year end				
Article and country to which exported								
	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-341
ANIMAL PRODUCTS—continued								
Pork: Bacon, including Cumberland sides: 4 United Kingdom	1,000 pounds 68, 220 6, 818 1, 439 4, 493 2, 422 5, 061 64 2, 502 7, 542	1,000 pounds 50, 127 9, 838 8, 113 6, 075 3, 244 4, 689 402 632 16, 434	1,000 pounds 53, 364 5, 982 15, 108 4, 633 2, 742 3, 649 933 1, 198 15, 628	1,000 pounds 57,443 8,468 8,289 3,734 2,642 4,648 2,273 2,959 15,933	1,000 pounds 26, 203 1, 151 764 1, 549 712 3, 264 1, 126 61 582	1,000 pounds 10,403 2,043 822 722 174 946 266 657 255	1,000 pounds 3,902 1,300 1,808 1,176 134 1,416 25 76 974	1,000 pounds 3,910 2,541 2,130 2,106 1,549 0 780 2,553
Total Europe	98, 561 21, 070 4, 584 228 1, 181 285 1, 634	99, 554 19, 107 5, 173 341 731 221 1, 840	103, 235 16, 698 5, 769 401 626 225 2, 291	106, 389 15, 957 . 5, 617 499 557 238 2, 418	35, 412 12, 399 2, 388 421 372 189 1, 231	16, 288 7, 128 650 330 278 114 788	10, 811 4, 629 270 388 270 109 1, 223	15, 835 4, 531 676 472 542 126 1, 659
Total	127, 543	126, 967	129, 245	131,670	52, 412	25, 576	17, 700	23, 841
Hams and shoulders, including Wiltshire sides: ⁴ United Kingdom Belgium Other Europe Total Europe	126, 266	104, 020 660 1, 846 106, 526	103, 986	103, 169 2, 136 1, 155 106, 460	81, 294 1, 464 236 82, 994	58, 126 607 193 58, 926	61, 647 574 1, 071 63, 292	62, 328 211 745 63, 284
Cuba Canada Other countries	6, 548 4, 803 6, 032	8, 167 6, 134 6, 992	7, 435 6, 309 7, 666	6, 307 11, 370 7, 435	82, 994 4, 272 5, 895 6, 588	4, 559 694 5, 155	3, 181 225 4, 515	2, 271 225 5, 708
Total	143, 649	127, 819	125, 396	131, 572	99, 749	69, 334	71, 213	71, 488
Canned: United KingdomOther Europe	5, 595 80	7, 632 97	6, 555 145	10, 737 238	9, 066 193	8,751 78	8, 106 66	10, 344 121
Total Europe	5, 675 48 188 11 14 795	7, 729 32 179 7 15 652	6, 700 36 244 7 23 964	10, 975 64 241 145 39 1, 319	9, 259 112 225 127 90 739	8, 829 173 101 167 169 580	8, 172 216 47 205 200 396	10, 465 304 59 56 195 792
Total	6, 731	8, 614	7, 974	12, 783	10, 552	10, 019	9, 236	11,871
Fresh: United KingdomOther Europe	7, 128 260	6, 418 1, 002	4, 547 2, 515	10, 527 3, 685	8, 098 464	6, 672 241	4, 582 889	24, 689 929
Total Europe Cuba Canada Panama Philippine Islands Other countries	143 577	7, 420 1, 557 798 558 194 532	7, 062 1, 732 582 444 288 533	14, 212 1, 618 1, 091 753 239 858	8, 562 424 410 771 222 704	6, 913 161 72 1, 430 257 437	5, 471 47 18 1, 844 255 547	25, 618 15 195 1, 530 210 731 28, 299
Total	10, 881	11, 059	10, 641	18, 771	11, 093	9, 270	8, 182	28, 299
Pickled: United Kingdom Norway Germany. Other Europe	3,857 394 134 416	5, 184 722 289 821	7, 608 854 366 1, 420	5, 094 799 328 1, 194	2, 945 364 89 327	1, 585 210 54 279	1, 130 230 37 471	1, 485 117 156 766
Total EuropeCubaCubaCanadaNewfoundland and Labrador British West Indies and Ber-	4,801 7,760 5,800 3,532	7, 016 7, 626 7, 056 3, 784	10, 248 10, 550 8, 596 4, 530	7, 415 9, 798 11, 211 4, 792	3, 725 4, 862 4, 356 3, 681	2, 128 1, 923 3, 058 3, 423	1, 868 1, 534 2, 565 3, 720	2, 52 1, 113 3, 974 5, 714
mudas Haiti, Republic of Other countries	2,730 917 2,422	2,851 1,055 2,312	2,810 838 2,334	221 719 5, 677	2, 226 544 1, 724	2, 464 513 1, 720	2, 420 515 1, 654	2, 957 518 2, 270
Total	27, 962	31, 650	39, 906	39, 833	21, 118	15, 229	14, 276	19, 070

Preliminary.
 Beginning July 1931, includes "Wiltshire sides."
 Beginning July 1931, "Wiltshire sides" included with "Bacon, including Cumberland sides."
 Beginning July 1931, "Wiltshire sides" included with "Bacon, including Cumberland sides."

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

States, by count	Ties, 1	320 - 21	10 193	0-04	-ООПИ.	nueu -		
	ł		Y	ear ende	ed June 3	60		
Article and country to which exported	1926-27	1927-28	1928-29	1929-30	1930–31	1931-32	1932-33	1933-341
ANIMAL PRODUCTS—continued Lard: United Kingdom	1,000 pounds 222, 086 174, 621 46, 071	1,000 pounds 233, 564 176, 771 35, 784 20, 384	1,000 pounds 229, 899 195, 695 36, 992	12 523	1,000 pounds 256, 353 107, 317 26, 478 6, 064	1,000 pounds 239, 358 142, 354 29, 980	1,000 pounds 255, 769 158, 226 42, 066	1,000 pounds 313, 805 72, 599 24, 271
Relgium Other Europe	7, 642 12, 718 26, 238	20, 384 14, 541 38, 144	36, 992 29, 200 14, 841 49, 070	19, 865 18, 700 56, 031	9, 406 14, 791	7, 125 5, 750 8, 799	5, 646 10, 150 12, 776	9, 264 16, 850 12, 786
Total Europe Cuba Mexico Colombia Canada Other countries	489, 376 79, 599 41, 963 12, 623 14, 888 37, 363	519, 188 78, 469 52, 475 15, 782 16, 172 34, 312	555, 697 84, 316 56, 728 23, 375 17, 864 42, 934	563, 401 79, 860 68, 531 19, 479 15, 112 40, 777	420, 409 49, 004 67, 491 11, 836 12, 224 24, 706	433, 366 38, 406 35, 483 4, 284 6, 197 24, 903	484, 633 10, 023 38, 085 113 3, 482 23, 963	449, 575 14, 247 47, 630 103 282 35, 160
Total		716, 398	780, 914	787, 160	585, 670	542, 639	560, 299	546, 997
Lard, neutral: Netherlands. Germany. United Kingdom. Norway. Denmark. Sweden. Other Europe.	5, 260 5, 895 3, 530 1, 039 726 912 921	6, 784 5, 623 5, 096 1, 228 1, 176 696 1, 206	4,710 4,023 3,919 895 894 649 1,463	6, 260 3, 010 2, 320 755 1, 379 787 1, 197	3, 264 1, 421 1, 526 529 1, 453 766 1, 015	2, 554 1, 152 745 455 804 765 916	1, 618 887 602 210 647 471 1, 050	598 135 424 89 911 734 1, 481
Total EuropeOther countries		21, 809 1, 990	16, 553 1, 762	15, 708 1, 075	9, 974 785	7,391 290	5, 483 75	4, 372 44
Total	20, 057	23, 799	18, 315	16, 783	10, 759	7, 681	5, 558	4, 416
Oleo oil: Germany Netherlands United Kingdom Norway Greece Belginm Denmark Other Europe	25, 443 27, 270 18, 691 5, 460 3, 972 1, 875 2, 691 2, 726	18, 267 17, 608 16, 092 3, 596 454 1, 576 2, 079 1, 939	16, 835 16, 744 16, 328 2, 763 602 1, 780 2, 062 2, 367	14, 630 22, 158 11, 785 2, 549 750 1, 470 2, 865 1, 883	13, 934 15, 868 13, 179 2, 018 1, 587 1, 837 2, 408 1, 808	11, 570 11, 698 9, 883 1, 500 1, 519 1, 716 2, 134 1, 415	11, 671 8, 808 9, 825 1, 031 461 1, 964 1, 654 1, 625	4, 755 4, 770 11, 065 719 428 2, 079 1, 020 1, 949
Total EuropeOther countries	1 88, 128	61, 611 3, 240	59, 481 3, 706	58, 040 3, 053	52, 639 2, 322	41, 435 2, 327	37, 039 2, 593	26, 785 644
Total	92, 720	64, 851	63, 187	61, 093	54, 961	43, 762	39, 632	27, 429
VEGETARLE PRODUCTS								
Cotton, unmanufactured: 5 Lint: Germany United Kingdom. France Italy Belgium Spain Netherlands. Other Europe.	1, 063 841 286 259 251 661	1,000 bales 2,090 1,443 904 708 213 321 144 605	1,000 bales 1,891 1,918 841 765 217 301 168 497	1,000 bales 1,770 1,306 860 705 182 285 143 316	1,000 bales 1,752 1,108 986 495 143 268 147 214	1,000 bales 1, 629 1, 314 487 673 143 309 157 297	1,000 bales 1,907 1,520 805 833 196 350 137	1,000 bales 1,477 1,412 799 722 138 320 121 608
Total Europe Japan China Other countries	8, 813 1, 644 262 562	6, 428 1, 007 136 319	6, 598 1, 373 245 304	5, 567 1, 071 232 226	5, 113 1, 233 393 309	5, 009 2, 396 1, 143 441	6, 282 1, 717 352 296	5, 594 2, 060 366 346
Total	11, 281	7,890	8, 520	7, 096	7,048	8, 989	8, 647	8, 366
Linters: Germany France United Kingdom Belgium Other Europe	12	132 36 22 7 15	120 32 16 12 18	70 26 7 8 14	56 27 11 5 14	59 24 16 1 16	76 34 41 14 25	88 28 53 19
Total Europe Canada Other countries	258	212 18 1	198 19 2	125 17 1	113 16 3	116 14 15	190 13 15	184 11 21
Total	278	231	219	143	132	145	218	216

¹ Preliminary.

⁴ Bales of 500 pounds gross.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

States, by count	,, ,,,,			0-04		nueu		
to this large description or morted			Y	ear ende	d June 3	0		
Article and country to which exported	1926-27	1927-28	1928–29	1929-30	1930–31	1931–32	1932-33	1933-341
VEGETABLE PRODUCTS—continued								
Fruits: Dried: Apples: Germany Netherlands Sweden. Denmark United Kingdom. Other Europe	1,000 pounds 12,158 9,568 2,278 1,371 2,282 3,656	1,000 pounds 10,877 3,315 2,524 1,384 1,018 1,617	1,000 pounds 22, 085 12, 451 2, 985 1, 674 2, 618 6, 995	1,000 pounds 11,425 4,323 3,015 894 1,522 1,880	1,000 pounds 18, 470 8, 763 1, 846 1, 161 1, 755 5, 598	1,000 pounds 12,055 8,154 2,501 1,429 2,198 4,656	1,000 pounds 17,835 7,569 4,043 1,205 1,366 4,001	1,000 pounds 19,971 7,226 3,037 848 1,104 4,578
Total EuropeOther countries		20, 735 969	48, 808 1, 216	23, 059 710	37, 593 528	30, 993 564	36, 019 582	36, 764 575
Total	32, 670	21,704	50, 024	23, 769	38, 121	31, 557	36, 601	37, 339
Apricots: Germany Netherlands. United Kingdom Belgium Norway Sweden Denmark France Other Europe.	4, 593 3, 316 2, 084 1, 038 945 952 1, 962 409 477	6, 512 4, 651 1, 964 1, 374 1, 260 994 2, 469 1, 273 661	7, 742 3, 750 1, 422 1, 691 988 776 1, 959 3, 015 936	6, 091 2, 493 1, 019 891 1, 327 939 2, 066 1, 310 728	8, 695 2, 933 1, 243 1, 932 786 835 2, 290 2, 458 820	11, 798 3, 913 2, 789 2, 007 1, 389 1, 151 3, 369 7, 139 1, 370	10, 790 2, 812 3, 170 1, 766 1, 132 1, 212 1, 453 8, 250 888	12, 450 3, 192 2, 605 2, 201 717 952 1, 774 8, 827 1, 362
Total Europe Canada Other countries		21, 158 1, 920 606	22, 279 1, 614 759	16, 864 1, 431 806	21, 992 1, 036 619	34, 925 1, 833 684	31, 473 1, 942 853	34, 080 1, 532 1, 004
Total	17, 901	23, 684	24, 652	19, 101	23, 647	37, 622	34, 268	36, 616
Prunes: Germany United Kingdom France. Netherlands. Sweden. It aly Denmark Belgium. Norway Other Europe.	38, 553 40, 173 27, 217 10, 242 6, 854 1, 368 6, 136 6, 019 2, 590 6, 558	79, 732 45, 601 27, 390 23, 140 7, 047 5, 533 9, 992 9, 402 5, 036 10, 701	77, 883 40, 836 59, 822 17, 286 5, 434 7, 700 6, 611 9, 885 3, 685 11, 652	44, 789 28, 143 9, 298 5, 584 6, 744 2, 867 6, 034 3, 387 3, 019 6, 992	97, 631 39, 824 46, 571 18, 903 8, 712 15, 851 9, 426 9, 614 5, 313 15, 970	62, 539 42, 757 46, 882 9, 309 8, 788 13, 262 7, 985 6, 652 5, 063 14, 935	34, 858 31, 610 41, 019 7, 611 6, 803 6, 236 6, 605 6, 397 4, 561 11, 565	64, 463 32, 161 29, 398 7, 632 6, 780 3, 345 6, 184 7, 903 3, 845 14, 637
Total Europe Canada Other countries	145, 710 20, 454 9, 380	223, 574 23, 272 13, 779	240, 794 18, 965 13, 292	116, 857 16, 187 9, 945	267, 815 16, 456 11, 983	218, 172 17, 161 8, 602	157, 265 15, 107 9, 982	176, 351 16, 027 10, 454
Total	175, 544	260, 625	273, 051	142, 989	296, 254	243, 935	182, 354	202, 832
Raisins: United Kingdom Germany Netherlands Denmark Belgium France Sweden Other Europe	49, 991 16, 039 13, 857 1, 994 4, 315 2, 144 6, 065 3, 309	70, 034 18, 733 18, 598 1, 593 5, 543 3, 496 10, 285 3, 643	71, 375 23, 022 24, 278 2, 244 6, 074 4, 455 14, 782 6, 555	36, 443 14, 059 7, 436 1, 286 2, 268 2, 750 9, 639 3, 734	40, 293 14, 628 8, 827 1, 385 2, 773 3, 303 10, 510 3, 221	48, 458 16, 899 7, 315 1, 834 2, 904 3, 507 8, 916 4, 577	47, 466 15, 494 4, 553 1, 770 1, 254 4, 073 8, 383 5, 786	30, 250 14, 730 4, 326 1, 346 1, 435 8, 872 6, 601 6, 558
Total EuropeCanadaChinaJapanOther countries	97, 714 37, 400 3, 549 2, 801 10, 873	131, 925 40, 148 4, 144 3, 086 13, 796	152, 785 39, 635 7, 574 2, 961 18, 801	77, 615 28, 668 4, 791 2, 992 14, 631	84, 940 22, 894 1, 816 2, 140 13, 310	94, 410 14, 576 1, 627 1, 922 9, 678	88,779 9,295 1,717 1,489 11,227	69, 120 10, 949 2, 249 1, 158 10, 478
Total		193, 099	221,756	128, 697	125, 100	122, 213	112, 507	93, 954
Fresh: Apples: United Kingdom Germany Netherlands Belgium France	1,000 barrels 3,305 361 141 80 4	1,000 barrels 1,004 27 2 1 (1)	1,000 barrels 1,720 236 201 321 62	953 50 17 14	1,000 barrels 954 404 334 313 131	1,000 barrels 1,893 73 49 189 367	1,000 barrels 1,048 225 50 132 35	1,000 barrels 392 272 50 191

¹ Preliminary.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

			¥	ear ende	d June 3	0		
Article and country to which exported	1926–27	1927-28	1928–29	1929-30	1930–31	1931–32	1932–33	1933-341
VEGETABLE PRODUCTS—continued								
Fruits—Continued. Fresh—Continued: Apples—Continued. DenmarkOther Europe	1,000 barrels 151 112	1,000 barrels 42 108	1,000 barrels 81 165	1,000 barrels 41 126	1,000 barrels 65 67	1,000 barrels 73 117	1,000 barrels 19 103	1,000 barrels 19 35
Total EuropeOther countries	4, 154 329	1, 184 165	2, 786 219	1, 209 218	2, 268 211	2, 761 57	1, 612 42	979 67
Total	4, 483	1, 349	3, 005	1, 427	2, 479	2, 818	1, 654	1,046
United Kingdom Germany Netherlands France Other Europe	1,000 boxes 3,723 1,237 670 6 506	1,000 boxes 2,709 737 72 1 506	1,000 boxes 4,836 2,695 1,687 77 762	1,000 boxes 2,655 946 272 49 549	1,000 boxes 3,991 3,476 2,417 677 824	1,000 boxes 3,475 1,988 1,303 913 771	1,000 boxes 2,429 2,222 1,660 883 554	1,000 boxes 2,183 2,329 1,627 1,133 560
Total Europe Canada Argentina Brazil Philippine Islands Other countries	6, 142 730 155 172 120 525	4, 025 542 227 115 88 387	10, 057 636 336 212 150 635	4, 471 500 294 224 88 421	11, 385 475 261 170 112 501	8, 450 238 167 127 105 380	7, 748 113 91 128 104 320	7,832 40 80 91 77 460
Total	7,844	5, 384	12,026	5, 998	12, 904	9, 467	8, 504	8, 580
Belgium United Kingdom Germany France. Canada. Other countries.	1,000 baskets	1,000 baskets	1,000 baskets	1,000 baskets	1,000 baskets	1,000 baskets 7 12 7 39 7 16 7 25 7 18	1,000 baskets 63 88 51 32 34 20	1,000 baskets 223 78 70 93 26 51
Total						7 111	288	541
Pears: United Kingdom Netherlands Germany Sweden France Belgium Other Europe	35,141 1,082 51 94 2	1,000 pounds 18,993 527 135 175 0 0	1,000 pounds 34,902 1,090 627 1,296 104 15	1,000 pounds 22, 223 883 1, 217 1, 170 6 26 269	1,000 pounds 68, 981 9, 812 6, 619 3, 176 1, 732 1, 129 880	1,000 pounds 47, 441 4, 589 1, 538 2, 415 10, 012 721 1, 699	1,000 pounds 61,064 10,599 4,687 3,515 20,921 22 828	1,000 pounds 55,942 10,689 2,954 2,379 19,831 505 1,043
Total Europe Canada Brazil Argentina Cuba Merico Venezuela Panama Other countries	4,079 2,169 2,095	19, 909 22, 119 3, 469 1, 873 2, 044 688 114 190 650	38, 139 32, 437 5, 536 2, 751 1, 779 900 153 255 897	25, 794 23, 273 5, 533 3, 904 1, 318 880 179 201 942	92, 329 30, 101 4, 753 3, 340 1, 214 803 356 277 1, 497	68, 415 16, 274 2, 071 1, 478 821 109 234 241 1, 059	101, 636 11, 815 2, 807 1, 432 658 159 173 317 990	93, 343 9, 035 3, 470 1, 160 394 137 221 365 2, 883
Total	73,877	51,056	82, 847	62, 024	134, 670	90, 702	119, 987	111,008
Lemons: Canada	14 13 8 3	1,000 boxes 154 14 11 15 5 3 2	1,000 boxes 228 16 13 17 7 2 2 2	1,000 boxes 132 9 10 18 6 2 3	1,000 boxes 210 10 8 19 7 2 2 10	1,000 boxes 209 3 7 22 6 3 2 6	1,000 baxes 117 1 6 12 5 2 1 6	1,000 boxes 151 17 6 7 5 2 2 2
Total	367	214	302	189	268	258	150	195

¹ Preliminary.
7 6 menths, January-June.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926–27 to 1933–34—Continued

			Y	ear ende	ed June 3			
Article and country to which exported	1926–27	1927-28		1929-30	1930-31		1932–33	1933-341
VEGETABLE PRODUCTS—continued.								
Fruits—Continued. Fresh—Continued. Oranges: United Kingdom Canada Other countries	1,000 boxes 403 2,636 301	1,000 boxes 402 2,346 240	1,000 boxes 709 3, 151 363	1,000 boxes 796 2,568 310	1,000 boxes 669 2,873 442	1,000 boxes 628 2,470 436	1,000 boxes 787 2,082 522	1,000 boxes 871 2,010 568
Total	3, 340	2, 988	4, 223	3, 674	3,984	3, 534	3, 391	3, 449
Grapefruit: United Kingdom Canada Germany France Other countries	310 264 8 4 27	333 349 6 4 27	561 335 8 4 32	496 308 10 5 35	741 408 23 7 43	692 453 13 6 38	534 328 5 9 26	505 372 7 17 45
Total	613	719	940	854	1, 222	1, 202	902	946
Canned: Apricots: United KingdomFranceOther Europe	1,000 pounds 29, 533 1, 458 1, 909	1,000 pounds 23, 013 781 2, 236	1,000 pounds 18, 115 2, 677 2, 656	1,000 pounds 26, 526 1, 311 2, 685	1,000 pounds 15, 423 703 1, 213	1,000 pounds 20, 329 679 1,476	1,000 pounds 17, 151 545 1, 246	1,000 pounds 21, 251 622 1, 620
Total Europe Canada Other countries	32, 900 1, 422 1, 575	26, 030 1, 316 1, 667	23, 448 1, 323 1, 478	30, 522 1, 376 1, 337	17, 339 687 998	22, 484 107 570	18, 942 108 454	23, 493 42 780
Total	35, 897	29, 013	26, 249	33, 235	19, 024	23, 161	19, 504	24, 315
Grapefruit: United KingdomOther Europe					7 4, 782 7 107	6, 264 81	14, 402 120	31, 326 156
Total Europe Canada Other countries					7 4, 889 7 1, 269 7 146	6, 345 209 95	14, 522 156 121	31, 482 238 178
Total					7 6, 304	6, 649	14, 799	31,898
Fruits for salad: United KingdomOther Europe			7 14, 755 7 573	26, 191 1, 228	28, 248 1, 011	29, 859 1, 383	25, 022 1, 136	37, 761 1, 503
Total Europe Canada Other countries			7 15, 328 7 559 7 665	27, 419 1, 153 1, 576	29, 259 669 1, 691	31, 242 184 776	26, 158 58 718	39, 264 95 1, 605
Total			7 16, 552	30, 148	31,619	32, 202	26, 934	40, 359
Peaches: United KingdomFrance. Nether lands. Other Europe.	1,906	65, 942 1, 256 1, 739 3, 119	73, 261 4, 252 2, 530 5, 524	54, 383 1, 301 1, 733 4, 560	61, 422 1, 213 1, 275 2, 730	58, 703 901 1, 522 2, 776	67, 578 760 2, 247 2, 087	72, 987 961 2, 050 2, 688
Total Europe Canada Cuba Other countries	70, 837 5, 105 2, 258 3, 696	72, 056 6, 873 2, 203 5, 502	85, 567 8, 813 1, 410 5, 648	61,977 7,517 1,085 3,891	66, 640 3, 038 1, 047 5, 038	63, 902 414 210 1, 774	72, 672 436 121 1, 770	78, 686 187 256 2, 335
Total	81,896	86, 634	101, 438	74, 470	75, 763	66, 300	74,999	81, 464
Pears: United Kingdom Irish Free State France Netherlands Germany Other Europe	589 523	46, 822 394 216 518 189 677	73, 910 678 909 714 459 739	47, 827 639 416 274 446 809	68, 763 533 474 165 353 858	68, 024 851 360 104 329 462	57, 819 796 278 352 69 299	74, 454 1, 210 321 380 172 380
Total EuropeCanadsCubaNetherlands Indies	61, 467 952 1, 389	48, 816 954 1, 024 153	1,425	701	71, 146 800 662 250	201 105	300 64	76, 926 67 140 153

¹ Preliminary. ⁷ 6 months, January-June.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

			Y	ear ende	d June 3	0		
Article and country to which exported	1926-27	1927-28	1928-29	1929-30	1930–31	1931-32	1932–33	1933-341
VEGETABLE PRODUCTS—continued								
Fruits—Continued. Canned—Continued. Pears—Continued. British India Philippine Islands	1,000 pounds 165 61	1,000 pounds 155 92	1,000 pounds 186 50	1,000 pounds 210 53	1,000 pounds 266 50	1,000 pounds 125 53	1,000 Pounds 71 41	1,000 pounds 118 46
Other countries	1,781 66,104	1,477	2, 176 82, 652	1,809	1, 180 74, 354	815 71, 570	601	934 78, 384
Total Pineapples: United Kingdom Germany France Netherlands Sweden Other Europe		14, 187 16, 656 2, 511 2, 262 1, 664 3, 730	13, 281 14, 043 3, 264 1, 533 1, 592 3, 749	14, 232 11, 472 4, 222 2, 009 1, 705 3, 769	12, 915 5, 471 2, 600 2, 089 887 3, 880	7, 348 4, 768 2, 484 656 729 2, 968	4,750 4,033 2,053 1,079 581 2,488	6, 919 5, 952 2, 164 1, 596 757 2, 936
Total Europe	28, 467 6, 312 508 2, 139	41, 010 7, 250 728 2, 239	37,462 7,675 391 2,005	37, 409 6, 144 597 2, 159	27,842 5,630 613 1,223	18, 953 780 335 852	14, 984 268 111 560	20,324 637 198 672
Total	37, 426	51, 227	47, 533	46, 309	35, 308	20, 920	15, 923	21,831
Grain and grain products: Barley (grain): Germany United Kingdom Netherlands Belgium Other Europe	1,000 bushels 2,066 8,981 815 1,576 816	1,000 bushels 11,599 10,151 2,581 642 634	1,000 bushels 13,085 13,161 3,909 1,782 749	1,000 bushels 1,521 9,370 479 651 756	1,000 bushels 0 8,670 8 775 537	1,000 bushels 77 4,237 234 171 162	1,000 bushels 123 6,607 175 1,734	1,000 bushels 0 5,324 0 91 160
Total Europe Canada Other countries	14, 254 2, 184 606	25, 607 10, 453 520	32,686 23,886 424	12,777 8,144 623	9, 990 9 303	4,881 116 87	8, 651 360 144	5, 575 95 265
Total	17,044	36, 580	56, 996	21,544	10, 302	5, 084	9, 155	5, 935
Corn (grain): Netherlands. Germany United Kingdom Denmark Canada Cuba Mexico. Other countries.	560 2 1, 268 563 10, 536 2, 016 2, 124 494	4, 311 2, 520 1, 885 845 6, 454 1, 021 323 1, 015	7,977 4,241 8,237 896 11,082 765 572 6,974	126 0 20 0 7,390 226 1,297 295	50 69 8 1 1,414 18 823 146	65 114 322 0 2,681 2 7 153	759 156 1,001 197 5,183 47 8 842	154 58 263 (3) 3,627 58 7 238
Total	17, 563	18, 374	40, 744	9, 354	2, 529	3, 344	8, 193	4,405
Oats (grain): United Kingdom Belgium Germany France Other Europe	907	645 123 115 44 316	141	13 0 0 0 0 2	0000	0 0 0 0 2	45 82 0 0 8 595	0 0 0 0
Total Europe	1,170	1, 243 3, 426 1, 028 98 239	6, 501 861 51	3, 913 490 44 173	0 680 61 35 131	1, 952 352 34 139	722 2,977 223 33 130	289 11 21 130
Total	9, 245	6, 034			907	2, 479	4, 085	451
Oatmeal: United Kingdom Finland Notherlands Belgium Other Europe	25, 930	14, 447 9, 471 7, 485	23, 775 17, 335 14, 525 3, 064	8, 358 8, 441 7, 804 801	4.833	8,990 2,569 6,658 1,775	2,537 1 5,864 1,536	156 0 2, 172 1, 316
Total Europe 1 Preliminary.	74, 806	39.749	67. 948	28.041	17.858	21, 292	11.432	5.613

Preliminary.
 Less than 500.
 Exports to Netherlands.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

			00 100					
Lutine and country to Which arroad			3	Year end	ed June	30		
Article and country to which exported	1926-27	1927-28	1928-29	1929-30	1930–31	1931–32	1932-33	1933-341
VEGETABLE PRODUCTS—continued.								
Grains and grain products—Contd. Oatmeal—Continued. South America. Mexico. Canada. British India. Other countries.	1,000 pounds 1,164 4,027 1,913 850 21,574	1,000 pounds 9,757 3,739 3,582 1,770 9,595	1,000 pounds 11,389 3,802 1,556 1,594 10,956	1,000 pounds 10,431 4,054 5,402 2,013 10,012	1,000 pounds 8,093 3,202 1,046 1,400 8,287	1,000 pounds 5, 101 1, 640 812 926 5, 483	1,000 pounds 4,142 1,423 694 44 5,228	1,000 pounds 4,826 453 336 30 5,913
Total	104, 334	68, 192	97, 245	59, 953	39, 886	35, 254	22, 963	17, 171
Rice (grain): Germany United Kingdom Belgium France Netherlands Greece Sweden Denmark Other Europe	36, 917 33, 675 18, 764 5, 169 17, 386 4, 331 1, 255 i, 822 2, 595	35, 851 35, 459 12, 778 12, 388 23, 660 1, 574 4, 801 3, 267 4, 041	43, 799 41, 812 23, 167 16, 065 19, 427 6, 739 7, 590 6, 770 7, 748	37, 915 35, 854 8, 959 13, 419 15, 080 4, 662 2, 838 3, 861 9, 161	34, 527 32, 364 14, 735 18, 187 18, 155 8, 479 4, 103 2, 397 9, 743	41, 670 35, 716 11, 994 22, 190 11, 672 12, 302 4, 157 2, 574 10, 397	29, 855 15, 534 10, 244 19, 095 8, 810 2, 479 3, 139 1, 970 4, 206	18, 172 12, 919 9, 007 23, 602 6, 687 5, 368 2, 606 1, 215 6, 782
Total Europe South America Central America Japan Canada Other countries	121, 914 24, 847 3, 468 68, 518 7, 525 8, 276	133, 819 41, 205 5, 888 2, 020 14, 227 33, 273	173, 117 78, 719 5, 852 14, 609 19, 800 21, 308	131, 749 69, 297 5, 031 935 18, 239 9, 908	142, 690 54, 899 4, 607 378 17, 342 4, 633	152, 672 17, 618 2, 678 363 20, 323 20, 819	95, 332 14, 373 1, 696 53 12, 253 12, 199	86, 358 1, 502 588 0 8, 973 3, 142
Total	234, 548	230, 432	313, 405	235, 159	224, 549	214, 473	135, 906	100, 563
Rye (grain): United Kingdom Netherlands Germany Denmark Norway France Belgium Italy Other Europe	1,000 bushels 2,345 1,768 1,577 510 489 289 441 0 66	1,000 bushels 1,710 1,408 1,245 466 298 145 135 0 567	1,000 bushels 1,174 868 364 406 57 13 9 0 490	1,000 bushels 21 0 21 69 3 11 0 0	1,000 bushels 0 21 0 48 0 17 41 40 1	1,000 bushels 0 278 290 54 0 0 0	1,000 bushels 0 167 0 28 0 0 0 0	1,000 bushels 0 0 0 0 0 0 0
Total Europe Canada Other countries		5, 974 20, 080 10	3, 381 5, 913 52	142 2,347 49	168 0 11	622 223 7	195 116 (2)	16 16
Total	21, 613	26,064	9, 346	2, 538	179	852	311	21
Wheat (grain): United Kingdom Netherlands Italy Belgium Germany France Greece Irish Free State Other Europe	39, 341 17, 131 10, 407 8, 926 7, 287 16, 079 4, 816 4, 282 2, 929	36, 574 11, 559 10, 450 8, 797 5, 582 5, 127 2, 819 3, 118 5, 177	16, 276 5, 149 5, 047 3, 232 1, 674 2, 215 3, 592 3, 551 5, 909	23, 931 6, 197 905 6, 314 4, 769 2, 214 7, 009 3, 088 2, 252	17, 863 6, 943 3, 675 7, 394 1, 722 7, 859 3, 379 2, 146 991	15, 112 8, 681 1, 441 10, 707 3, 530 6, 148 11, 149 1, 180 573	1, 558 700 398 2, 372 263 1, 121 3, 149 1, 065	1, 001 99 0 171 0 38 0 2, 037
Total Europe	111, 198	89, 203 45, 563 6, 304 0 4, 929	46, 645 41, 190 3, 782 1, 241 10, 256	56, 679 16, 777 9, 185 140 9, 394	51, 972 12, 493 3, 063 1, 872 6, 965	58, 521 5, 799 1, 646 14, 350 16, 205	10, 685 492 118 0 9 9, 592	3, 364 17 4, 840 9, 839 739
Total		145, 999	103, 114	92, 175	76, 365	96, 521	20, 887	18, 799
Wheat flour: Netherlands United Kingdom Germany. Greece. Irish Free State	1,000 barrels 1,568 1,733 834 282 94	1,000 barrels 1,530 1,224 534 113 62	49	1,031 1,560 452 30	1,000 barrels 1,297 1,378 243 12 155	1,000 barrels 178 775 145 7	1,000 barrels 138 91 25 1 69	1,000 barrels 83 69 15

¹ Preliminary.

³ Less than 500.

⁹ Includes 9,106,000 bushels to Brazil.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

	Year ended June 30											
			7	ear ende	d June 8	30						
Article and country to which exported	1926-27	1927-28	1928-29	1929-30	1930–31	1931–32	1932~33	1933-341				
VEGETABLE PRODUCTS—continued.												
Grain and grain products—Contd. Wheat flour—Continued. Denmark. Finland. Norway. Other Europe.	1,000 barrels 439 480 336 297	1,000 barrels 528 482 324 296	1,000 barrels 423 400 259 256	1,000 barrels 535 341 363 283	1,000 barrels 508 282 313 358	1,000 barrels 284 139 273 120	1,000 barrels 53 27 177 107	1,000 barrels 40 19 124 113				
Total Europe Cuba Other West Indies 3 Hong Kong Brazil China Philippine Islands Central America Kwantung Venezuela Egypt Other countries	6, 063 1, 199 747 618 904 418 666 613 189 175 337 1, 456	5, 093 1, 216 676 929 873 790 727 697 136 201 173 1, 310	3,708 1,204 809 868 831 1,242 802 752 428 248 220 1,776	4, 740 1, 199 663 752 780 553 730 684 891 295 205 1, 502	4,546 968 590 843 671 955 640 658 382 254 185 1,034	2, 038 871 550 680 113 1, 740 630 596 96 242 163 638	688 738 436 427 61 133 562 503 30 166 131 449	519 809 216 196 32 491 380 471 45 186 135 393				
Total	13, 385	12, 821	12, 888	12, 994	11,726	8, 357	4, 324	3, 873				
Hops: United Kingdom Belgium Irish Free State Other Europe	1,000 pounds 4,559 1,892 702 2,225	1,000 pounds 6,121 255 583 759	1,000 pounds 4,175 129 974 59	1,000 pounds 3,255 93 613 40	1,000 pounds 2,745 77 795 111	1,000 pounds 2,359 37 769 10	1,000 pounds 1,145 41 855 0	1,000 pounds 4,486 247 1,596 156				
Total Europe Canada Other countries	9, 378 2, 772 1, 219	7,718 3,168 926	5,337 2,838 661	4, 001 2, 522 270	3, 728 1, 685 180	3, 175 566 76	2, 041 189 201	6, 485 749 354				
Total	13, 369	11,812	8,836	6, 793	5, 593	3, 817	2, 431	7, 588				
Oil cake and oil-cake meal: Cottonseed cake: ¹⁰ Denmark		tons 225, 262 29, 389 8, 806	tons 159, 798 24, 922 12, 895	tons 84, 244 19, 752 1, 686	tons 33, 910 0 11	tons 140, 508 14, 027 6, 826	tons 106, 572 2, 712 846	tons 56, 504 923 834				
Total EuropeOther countries	292, 763 6, 961	263, 457 55	197, 615 14	105, 682 101	33, 921 1, 459	161, 361 89	110, 130 50	58, 261 67				
Total	299, 724	263, 512	197, 629	105, 783	35, 380	161, 450	110, 180	58, 328				
Cottonseed meal: 10 United Kingdom Germany Norway Irish Free State France Netherlands Belgium Other Europe	75, 350 63, 844 14, 373 9, 319 344 12, 650 4, 202 228	5,828 2,806 247 6,173	30, 042 23, 156 5, 096 4, 854 2, 024 8, 495 3, 946 3, 757	23, 478 9, 876 510 7, 152 1, 148 3, 708 1, 630 1, 572	1, 648 0 56 0 560 84 506 (2)	9, 474 10, 528 6, 398 700 1, 810	2,800	2, 334 73 616 2, 940 338 1, 841 1, 381				
Total EuropeCanadaOther countries	180, 310	4,843	6.478	49, 074 13, 174 2, 056	2, 854 4, 272 1, 123	47, 646 4, 388 1, 652	37, 045 2, 214 2, 001	9, 631 4, 506 1, 415				
Total	195, 534	68, 749	88, 708	-		-	-1	15, 552				
Linseed or flaxseed cake: 16 Netherlands Belginm United Kingdom Other Europe		4,576	185, 693 102, 102 20, 196 4, 052	161, 768 92, 494 24, 373 21, 058	21, 248	103, 094 69, 818 10, 864 27, 378	50, 254	136, 287 107, 163 16, 137 2, 957				
Total Europe Other countries	304, 697 63	294, 527 60	312, 043 414		144, 578 295	211, 154 517	113, 080 207	262, 544 1, 817				
Total	304, 760	294, 587	312, 457	-	144, 878	211,671	113, 287	264, 361				

¹ Preliminary. ² Less than 500.

^{*} Excludes Bermudas.

¹⁶ Tons of 2,000 pounds each.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

			Y	ear ende	d June 3	0		
Article and country to which exported	1926–27	1927-28	1928-29	1929-30	1930–31	1931-32	1932-33	1933-341
VEGETABLE PRODUCTS—continued Cottonseed oil: Canads. Mexico Cuba Argentins. Japan Panama. Other countries. Total.	1,000 pounds 37,683 3,868 2,770 2,160 925 742 9,432 57,580	1,000 pounds 49,407 5,318 2,033 1,108 831 719 2,054 61,470	1,000 pounds 20,550 2,374 1,836 912 911 788 2,160 29,531	1,000 pounds 24,666 947 2,448 253 1,179 1,063 1,442 31,998	1,000 pounds 9,152 3,954 9,855 94 1,146 768 1,384 26,353	1,000 pounds 28,572 450 7,797 3 1,602 900 1,661 40,985	1,000 pounds 29,634 2,062 5,388 22 3,543 1,007 2,771 44,427	1,000 pounds 10,988 563 7,112 0 2,261 801 1,464 23,189
Timothy seed: United Kingdom Germany Denmark France Netherlands Belgium Other Europe	9 774	2, 928 2, 942 1, 425 202 217 137 454	668 352 394 63 84 22 306	1,841 226 259 29 97 18 445	2,054 391 147 1 45 22 67	2, 428 483 331 235 166 130 54	1, 365 179 39 8 83 0 136	1,356 0 0 1 34 0
Total Europe Canada New Zealand Other countries	6, 729 7, 111 187 33	8, 305 8, 838 440 95	1, 889 6, 502 194 51	2,915 8,868 252 76	2,727 10,637 171 60	3, 827 9, 768 277 76	1, 810 3, 354 263 54	1, 402 3, 709 210 58
Total	14, 060	17,678	8, 636	12, 111	13, 595	13, 948	5, 481	5, 379
Sugar, refined: 10 United Kingdom	Tons 37, 069 14, 912 4, 523 2, 772 206 (11) 7, 200	Tons 35, 460 12, 579 1, 050 4, 338 192 421 6, 567	Tons 23, 507 14, 389 1, 526 4, 839 829 493 780	Tons 25, 224 5, 733 1, 347 5, 435 1, 013 491 435	Tons 23, 111 1, 735 1, 636 4, 689 1, 445 686 385	Tons 23, 613 2, 612 569 4, 341 1, 366 610 767	Tons 21, 480 3, 072 586 4, 616 325 798 1, 634	Tons 30, 210 4, 055 535 4, 448 445 656 2, 604
Total		60, 607	46, 363	39,678	33, 687	33, 878	32, 511	42, 953
Uruguay	2, 089 509 1, 962	12, 692 4, 816 4, 921 3, 711 1, 703 2, 000 620 6, 812 2 251 1, 876 5, 545	2, 439 2, 342 13, 396 4 744 2, 368	755 627	6, 643 5, 331 6, 110 2, 295 747 3, 958 2, 331 4, 740 1, 428 874 278 1, 796	2, 590 3, 644 3, 793 1, 222 236 5, 041 1, 501 292 225 513 94 1, 044	89 2, 099 478 592 244 3, 234 455 84 (11) 272 1 653	2, 911 2, 391 794 1, 147 224 3, 548 3, 17 265 124 14, 976
Total	114, 084	105, 558	127, 877	78, 622	70, 218	54, 073	40, 712	59, 73
Tobacco, leaf: Flue-cured:	1,000 pounds 134,886 11,105 6,941 1,037 9,775	8, 367 2, 758	1171 515	186, 583 8, 150 7, 267 2, 190	1184 448	1,000 pounds 129, 399 7, 610 9, 688 3, 229 12, 205		1,000 pounds 170,507 7,831 11,541 3,201 12,27
Total Europe China ¹² Australia Canada Japan British India. Other countries	- 163, 744 - 71, 760 - 19, 307 - 11, 984 - 8, 553	192, 081 68, 842 21, 488 14, 049 11, 555 5, 031	210, 553 131, 254 18, 146 14, 601 14, 564	I IX KKII	23, 173 11, 210 11, 604	11, 007 10, 680 4, 128 3, 721	76, 607 8, 693 7, 487 4, 735 3, 293	205, 370 87, 020 10, 84 7, 940 7, 750 2, 230 9, 120
Total	288, 673	328, 924	413, 949	429, 942	432, 688	285, 488	269, 662	330, 31

¹ Preliminary.
10 Tons of 2,000 pounds each.
11 Less than ½ ton.
12 Includes Hong Kong and Kwantung.

Table 449.—Exports (domestic) of principal agricultural products from the United States, by countries, 1926-27 to 1933-34—Continued

			Z	ear ende	ed June S	30		
Article and country to which exported	1926–27	1927-28	1928-29	1929-30	1930–31	1931–32	1932-33	1933-341
VEGETABLE PRODUCTS—continued.								
Tobacco, leaf—Continued: Burley:	1,000 pounds	1,000 pouuds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Roloium	6.086	2, 151	2, 245	3,362	3,085	3, 842 530	4,319	3,819
Germany	1,053 224	885 445	152 6	159 20	442 373	496	488 285	540 465
Netherlands	2, 978 2, 130	511	143	168	232	1,067 1,262	694	2, 218
Portugal	2, 130 50	1,986	1,539 5	2,969 193	1,363 0	1, 262 61	1,612 88	2, 242 406
Italy Netherlands Portugal Sweden United Kingdom	351	862	118	391	776	320	66	230
Omer murber	000	517	286	333	843	966	1, 262	1, 208
Total Europe Newfoundland and Labrador.	13, 502	7, 357 297	4, 494 306	7, 595 326	7,114 185	8, 544 203	8, 814 115	11, 128
Newfoundland and Labrador Australia	138 42	230	609	510	246	203 268	388	327 271
Argentina	0	8	6	4	45	67	28	154
Other countries	3, 427	1,125	821	819	887	833	708	680
Total	17, 109	9,017	6, 236	9, 254	8, 477	9,915	10,053	12, 560
Black fat, waterbaler, and dark African:		l		i				
British West Africa	7 102	343	1,321	3,740	2,634	6,044	4, 360	4, 249
French Africa Portuguese Africa	7 69 7 3	119	1,409 55	1,993	2,511 172	2,720 545	2, 099 358	4, 249 2, 118
Spanish Africa	78	44	95	222	152	284	299	476 360
Spanish Africa Germany Other countries	70	391	118	272	80	124	301	465
	7 72 7 254		633	907	2,007	747	810	1,053
Total	254	904	3, 631	7, 224	7, 556	10, 464	8, 227	8, 721
Dark-fired Kentucky and Tennessee:	1	1	1	1	1			
France	23, 076 19, 365	14, 516	15,608	37, 129	18,844	28, 148	24, 456	20, 333
Spain	19,365	11, 275 7, 383 8, 999	4, 110 5, 894 6, 861	2,448	2,011 8,028 5,291	5, 791 9, 102	4, 155	17,630
Belgium United Kingdom	19, 894 11, 919	8,999	6,861	4,673 6,906	5, 291	5,621	8, 815 4, 514	11,004 2,254
Germany Netherlands Poland and Danzig Switzerland	13, 937	8.068	110 858	6, 906 8, 329	9,677	7,602	4, 514 7, 353 2, 434 2, 187 1, 205	16.078
Poland and Danzig	1.866	9, 246 3, 041	9, 671 3, 004	11,907 4,509	12,821 3,347	5, 074 2, 330	2,434	2,902 709
Switzerland	1, 866 2, 989 3, 176	931	1.000	4, 509 1, 357	2.551	1,468	1, 205	3,300
Argentina British West Africa French Africa Mexico	3, 176 4, 794	2, 197 5, 451	2, 676 4, 757	2, 130 3, 029	2, 547 886	2,123 204	1,017	563
French Africa	4,041	4,363	2,554	3, 254	1,366	1,223	685	67 841
MexicoOther countries	1, 315 14, 585	557	823	506 10, 210	837 14, 100	54	21	25
Total		10, 645 87, 172	79, 304	96, 387	82, 306	11, 451 80, 191	6,714	10, 151
Th 1- 1711		01, 112	10, 304	90, 367	04, 300	ou, 191	63, 652	75, 857
France	1, 627	1, 241	1,698	651	150	0	0	0
Germany	3,842	3,645	2, 560 1, 206	2, 156 1, 242	3, 277 780	1,783	2, 164	1,101
Norway	3, 842 2, 382 2, 150	1,976	2.679	1,358	1,824	1,887 1,576	1,572 1,559	1,783 1,656
Portugal	1,030	1,742 760	2, 679 769	523	277	239	89	559
United Kingdom Relgium	1, 521 740	1, 399 1, 195	1,752	2,797 402	1,068 679	2,284 1,687	609 1,301	1, 156 1, 108
France France Germany Netherlands Norway Portugal United Kingdom Belgium Other Europe	668	5, 453	2, 276 6, 910	5, 103	2,695	1,993	3, 344	3,040
Total Europe	13,960	17, 411	19,850	14, 232	10,750	11,449	10, 638	10, 403
Canada	152 1, 733	226 111	284 110	210 179	240 107	35	109	23 20
China 12Australia	2, 422 266	1,660	721 422	1,642	1,020	488	366	374
British West Africa Other countries	266	344	422	572	123	19	31	146
	1, 492	1,067	1, 484	1,842	1,109	1,100	1,380	1,406
Total	20, 025	20, 819	22, 871	18, 677	13, 349	13,091	12, 524	12, 372
Maryland and Ohio export: Netherlands	4, 239	6, 103	2,052	1_157	797	665	2,018	3, 973
France	1 7 237	4,269	1 6,545	1, 157 2, 372 725	4,917	8.244	2,916 3,074	1.755
Belgium Switzerland	704 1, 107	1 890	1 995	725 1,585	1.003	837 1,841	1, 263	1, 278 2, 023
Germany	653	1, 179 870	1, 995 321	1 484	1,707 209	95	236	624
Other Europe	1, 416	1,348	396	491	1,066	461	591	430
Total EuropeOther countries	15, 356	14, 659 496	11, 928 773	6,814	9, 699	7, 143	9, 590	10, 083
	1,029			7, 987	614	187	400	441
Total 700	1 10, 000	15, 155	12, 701	1,887	10, 313	7,330	9,990	10, 524

¹ Preliminary. ⁷ Six months, January-June. ¹² Includes Hong Kong and Kwantung. Bureau of Agricultural Economics, Foreign Agricultural Service Division. Compiled from Monthly Summary of Foreign Commerce of the United States, January and June issues, 1927–32, and official records of the Bureau of Foreign and Domestic Commerce.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926–27 to 1933–34

Article and country from			-	Year ende	ed June 30)		
which imported	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-341
ANIMALS AND ANIMAL PRODUCTS Cattle: Mexico	Thou- sands 99 168 1	Thou- sands 204 343 1 1	Thou- sands 309 256 1	Thou- sands 226 192 2 1	Thou- sands 56 26 3	Thou- sands 79 24 3	Thou- sands 92 8 2 (2)	Thou- sands 61 6 2
Total	268	549	567	421	86	106	102	69
Butter: United Kingdom Denmark Other Europe	1,000 pounds 3,932 1,529 192	1,000 pounds 870 761 453	1,000 pounds 58 902 279	1,000 pounds 171 1,109 38	1,000 pounds 17 172 26	1,000 pounds 38 210 34	1,000 pounds 129 124 106	193
Total Europe New Zealand Canada Other countries	5, 653 3, 682 610 765	2, 084 2, 396 275 200	1, 239 1, 674 237 149	1, 318 1, 141 142 250	877 162	729	359 547 64 21	
Total	10, 710	4, 955	3, 299	2, 851	1, 329	1,838	991	763
Cheese, Emmenthaler (Swiss): 3 Switzerland				4 934 4 40 4 48 4 120	594 497 1, 110	661 813 883	518 420 874	566 204 1,212
Total				4 1, 142	15, 772	13, 568	12, 304	7, 987
Cheese, other than Swiss: 6 Italy France Netherlands Switzerland Other Europe	36, 572 4, 923 3, 687 20, 638 6, 634	5, 874 3, 736	38, 337 6, 243 3, 525 19, 731 6, 052	36, 958 6, 035 2, 915 16, 452 8, 469	2, 334 3, 607	2, 435 1, 463	30, 398 3, 775 2, 177 1, 516 3, 936	26, 083 3, 079 1, 709 1, 236 4, 618
Total Europe Canada Other countries	72, 454 16, 609 719	63, 374 11, 439 611	73, 888 9, 381 1, 337	70, 829 5, 895 396	41, 102 818 280	1,366	41, 802 1, 109 708	36, 725 1, 165 1, 027
Total	89, 782	75, 424	84, 606	77, 120	42, 200	43, 667	43,619	38, 917
Eggs in the shell: Hong Kong China Canada Other countries	1,000 dozen 219 6 54 17	dozen 199 40	1,000 dozen 236 28 13	250 15 60	dozen 263 19 15	dozen 248 20 13	14	171 13 5
Total	296	256	291	337	301	282	262	198
Eggs and egg yolks, dried, frozen and preserved: China United Kingdom Other countries	1,000 pounds 14,825 3,357 133	1,000 pounds 5, 409 248 244	1,000 pounds 20, 582 3, 285 593	1,000 pounds 18, 206 4, 498 258	76	1,000 pounds 2,745 84 79	1,000 pounds 2,016 0	0
Total	18, 315	5, 901	24, 460	22, 957	8, 056	2, 908	2, 017	2, 206
Egg albumen: ChinaOther countries	6, 907 919	2, 836 78	3, 431 77	4, 868 450	2, 208 13	1, 654 68	1, 424 (³)	355 6
Total	7,826	2, 914	3, 508	5, 318	2, 221	1, 722	1, 424	361

Preliminary. Imports for consumption.
 Less than 500.
 Included with "cheese, other than Swiss" prior to June 18, 1930.
 June 18 to June 30.
 Includes "Swiss cheese" prior to June 18, 1930.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

Article and country from				Year ende	d June 30			
which imported	1926-27	1927–28	1928-29	1929-30	1930-31	1931-32	1932-33	1933–341
ANIMALS AND ANIMAL PRODUCTS—continued			4 000	4 000	4 000	1 000	4 000	4 000
Meats canned:	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Uruguay	14, 438 17, 425	16, 903 18, 718	31, 262 40, 870	36, 442	8,893 9,013	11, 872 7, 448	16, 430 12, 326	20, 726 17, 726
Paraguay	378	2, 352 421	3,400	42, 640 2, 274	1, 401	399	1,588	1,021
Uruguay Argentina Paraguay Japan Other countries	95 1, 183	421 1, 960	165 2, 086	158 1, 124	78 429	95 382	91 167	57 119
				82, 638	19,814	20, 196	30, 602	
Total	33, 519	40, 354	77, 783	02,000	15,014	20, 190	50,002	39, 649
Silk, raw, in skeins reeled from cocoon:					OM 000	20 400	2 222	
Japan	59, 934 11, 872	64, 673 0 816	63, 415 12, 326	61, 243 12, 717 3, 733	67, 309 10, 432	69, 423 5, 258 3, 168	67, 098 3, 072 3, 254	58, 806 3, 087
China Other countries	1,596	9, 816 1, 269	1, 455	3, 733	4,038	3, 168	3, 254	1,416
Total	73, 402	75, 758	77, 196	77, 693	81,779	77, 849	73, 424	63, 309
Wool, unmanufactured:								
Carpet wool: United Kingdom	51,602	32, 423	33, 861	23, 326	14, 085	9, 159	9, 435	16, 806
China	36,362	55, 998	53, 589	36,931	33, 603	9, 159 18, 720	9, 435 7, 773	44, 800
Argentina British India	9, 513 6, 906	8, 924 10, 811	19,820 14,390	24, 405 11, 106	25, 567 5, 163	20, 428 9, 430	11,827	34, 039 14, 942
Paiestine and Syria	8,064	8.420	14, 390 3, 953	10, 460	4,388	3, 970	1, 186 1, 685	2, 155
Iraq	4, 115 1, 650	6, 550 2, 191	6, 349 3, 765	7, 481 3, 714	4, 210 2, 351	6, 037 2, 022	1, 685 1, 769	3 862
Egypt Italy	4, 532	4,056	3,668	3,053	2,772	2, 022 2, 627	1, 312	3,766
Irish Free State	1,729	1, 580 2, 814	2, 134 3, 260	2, 126 3, 250	490 2,622	1, 427	1, 354 1, 299	2, 221 3, 680
Germany France	5, 371	5.414	4.470	4,260	1,814	1, 828 1, 078	401	1,486
FranceSwitzerlandOther countries	2, 132 9, 846	1, 515 4, 793	1, 509 13, 945	1,506	1, 173 5, 023	1, 002 3, 731	55 1, 614	76 4, 269
Total		145, 489	164, 713		103, 261	81, 459	44, 019	134, 979
Clothing wool:								
United Kingdom	4,775	4, 169 5, 515	2, 499 5, 936	1,807 5,690	1,800 2,871	1, 084 3, 489	516 285	2, 308 2, 579
Australia	3, 797 2, 353	2,838	1,601	1, 129	312	75	25	653
Argentina	2,843 1,186	2, 838 2, 545 1, 677	1,872 1,625	1, 129 2, 300 1, 094	354 361	96 1	3	259 306
Chile New Zealand Uruguay	662	1,670	2, 081	3, 514	366	1, 411	46	582
Uruguay	497 657	213 747	2, 081 1, 082 1, 732	1, 275	143 352	23 1, 032	0	44
Other countries						<u> </u>	149	589
Total	16,770	19, 374	18, 408	18, 856	6, 559	7, 211	1,024	7, 320
Combing wool: United Kingdom	15, 484	17, 344	12, 319	8,784	2,933	2, 114	2, 423	6, 433
Australia	38, 714	17, 344 21, 992	12, 319 17, 906	8,784 14,911	2, 933 22, 018	9, 636	2, 423 2, 243	9, 282 3, 319
Argentina Uruguay New Zealand	17, 751	11, 424 6, 962	12, 875 20, 341	10, 674 11, 815	1,898 4,553	193 583	⁽²⁾ 282	3, 319
New Zealand	5, 192	6, 962 8, 260	₹ X_577	1 3.193	≀ 2∟1165	413	851	3, 427
Union of South Africa Canada	4, 488 3, 599	4, 566 6, 122	2, 913 5, 314	925 5, 057	2, 715 396	1, 172 926	149 677	899 5, 253
Other countries	2, 415	3, 612	3, 233	3, 215	2, 150	93	43	527
Total	102, 908	80, 282	83, 478	58, 474	38, 728	15, 130	6, 668	32, 986
Hair of the Angora goat								
(mohair), alpaca: United Kingdom Turkey (Europe and	792	541	384	391	350	50	3 18	221
	3, 237	983	2,034	553	9	0	0	732
British South Africa_	2, 505 82	660	884	370	407 149	0 50	98	347
Peru China	74	184	145	48	26	27	0	302 3
Other countries.	62	97	175	52	58	14	30	96
Total	6, 752	2,890	4, 338	2, 036	999	141	593	1, 701

¹ Preliminary. Imports for consumption. ² Less than 500.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

Year ended June 30									
Article and country from which imported	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-341	
ANIMALS AND ANIMAL PRODUCTS—continued									
~	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	
Germany	1,904	1, 353 4, 975	2, 599 5, 719	1,813	763 3, 897	850	582	418 4,975	
Canada	3, 351	3, 928	2, 989	2, 218	1, 808	3, 373 2, 199	3, 648 1, 938	1,837	
Australia	4, 804 3, 351 2, 198	3, 928 2, 213	2, 989 2, 597	1,813 5,459 2,218 3,024	1, 808 1, 638	1,457	1,286	1, 456	
Sausage casings: Germany. Argentina. Canada. Australia. China. New Zealand. Uruguay. Chila.	2, 074 901	1, 640 1, 223	1. 445	1, 256 1, 470	918	655	463	713	
Uruguay	876	917	1, 086 1, 317	1,527	798 736	1,087 497	1, 250 664	2, 242 963	
Chile	454	260	859	648	404	522	386	528	
U.S.S.R. (Russia in	633	000	051	1 200	400	***	250		
Chile		665	951	1,300		500	650	341	
rope) Other countries	213 1, 4 36	235 2, 136	268 2, 210	224 2, 617	353 1, 544	251 1, 835	295 1, 725	445 2, 135	
Total	18, 844	19, 545	22, 040	21, 556	13, 355	13, 226	12, 887	16, 053	
VEGETABLE PRODUCTS									
Cocoa or cacao beans:									
British West Africa	164, 338	133, 963	146, 739 87, 338	145, 400	151, 524 75, 726	131, 720 142, 284	167, 660	191, 223 130, 336	
Brazil	81, 148 51, 084	100, 262 39, 591	87, 338 50, 353	95, 516 41, 120	75, 726 37, 898	142,284 54,412	167, 660 173, 894 38, 244	130, 336 49, 239	
Dominican Republic British West Indies and							i	l .	
BermudasVenezuela	31, 247 13, 207 15, 797	38, 217 14, 482 29, 074	41, 933 18, 008 17, 424	39, 276 19, 302 8, 565 12, 790 5, 528	41, 805 17, 338 11, 506	21, 240 13, 936 8, 347	27, 084	14, 640 18, 794 718	
Venezuela	13, 207	14, 482	18,008	19, 302	17, 338	13, 936	23, 451 725	18, 794	
United Kingdom	15, 644	9, 234	10, 612	12, 790	16, 429		1,645	1,917	
Netherlands	13, 133 13, 710	9, 234 11, 502	6, 074	5, 528	9, 990	12, 103 4, 289	125	861	
Ecuador	13,710 220	19, 210	16, 939 44	14,754	13, 170	מאים דד	1 0 598	11, 399	
Panama	4.899	3, 861	9, 148	14, 754 8, 741 7, 693	13, 170 12, 308 10, 080	13, 451	10, 518	21, 484 11, 046	
Germany United Kingdom Netherlands Ecuador French Africa Panama Other countries	4, 899 20, 757	3, 861 12, 147	14, 631	23, 253	17, 668	7, 282 13, 451 13, 869	10, 518 10, 769 12, 720	14, 174	
Total	425, 184	411, 543	419, 243	421, 938	415, 442	434, 853	476, 421	465, 831	
Coffee:									
Brazil	1,000,721	1, 059, 742	933, 056	1,011,430	1, 196, 881	1, 158, 566	809, 530	1, 075, 417	
ColombiaCentral America	313, 590 40, 070	261, 678	263, 236 54, 774	351, 333 56, 763	330, 379	334, 105 31, 923	376, 555 75, 246	354, 960	
Venezuela	43, 436	64, 443 53, 072	64, 621	55, 710	53, 276 60, 378 87, 655	45, 849	40, 586	54, 621 30, 483	
VenezuelaOther countries	43, 436 47, 030	96, 457	64, 621 119, 383	86, 822	87, 655	58, 398	156, 244	82, 626	
Total	1, 444, 847	1, 535, 392	1, 435, 070	1, 562, 058	1, 728, 569	1, 628, 841	1, 458, 161	1, 598, 107	
Fibers:									
Cotton, raw: 6	Bales	Bales	Bales	Bales	Bales	Bales	Bales	Bales	
China	213, 975 30, 408	197, 868 67, 203	282, 442 38, 816	181, 740 46, 206	31, 135	66, 313 9, 092	52, 640 50, 595	101, 952 21, 583	
Egypt China British India	19, 330	26, 081	63 842	59, 200 40, 702	34, 577	1 21 RR5	1 3 833	97 167	
Mexico	19, 330 97, 384 18, 097	24, 076	54, 402	40, 702	34, 577 14, 238 1, 623	21, 921	223	1,536	
PeruOther countries	20, 311	19, 133 32, 689	54, 402 18, 066 28, 277	19, 144 66, 517	3, 837	21, 921 3, 757 15, 748	4, 889 20, 406	1, 536 1, 736 3, 351	
Total	399, 505	367, 050		413, 509	107, 098	138, 694	132, 586	157, 325	
Flax, unmanufactured: 7	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	
Latvia	898	1, 520	2, 176	2, 231	1,926 383	1,836	18	14	
Latvia United Kingdom	1, 231	1,800	2, 176 1, 758	2, 231 1, 768	383	487	415	952	
U. S. S. R. (Russia in Europe)	642	149	294	1, 127	155	62	2,047	2, 521	
Belgium	440	739	757	81.0	536	157	217	1,583	
Belgium Netherlands Other Europe	287	253	208	231	154	67	12	92	
Other Europe	790	726	283	695	275	1,077	184	354	
Total Europe	4, 294	5, 187	5, 476	6, 862	3, 429	3,686	2, 893	5, 516	
Canada	45	126	72	97	137	233	194	173	
Other countries	366	124	102	54	32	0	0	0	
								5, 689	

Preliminary. Imports for consumption.
 Bales of 478 pounds net.
 Tons of 2,240 pounds.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

A division of a country from			`	Year ende	d June 30			
Article and country from which imported	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-341
VEGETABLE PRODUCTS—con. Fibers, Continued: Manila fiber: 7 Philippine Islands Other countries	Tons 60, 381 249	Tons 46, 967 1, 051	Tons 59, 832 472	Tons 70, 813 2, 035	Tons 42, 569 635	Tons 26, 532 202	Tons 24, 870 301	Tons 42, 387 434
Total	60,630	48, 018	60, 304	72, 848	43, 204	26, 734	25, 171	42, 821
Sisal and henequen:7 Mexico	82, 008 18, 870 2, 770 238 297 11, 968	92, 534 16, 433 1, 849 1, 973 234 11, 181	95, 080 20, 037 2, 186 2, 216 1, 686 14, 146	57, 098 30, 450 3, 402 3, 161 1, 583 16, 814	38, 463 24, 754 4, 181 2, 595 7, 264 6, 675	71, 428 14, 915 2, 065 5, 219 7, 922 7, 243	105, 353 38, 137 3, 933 0 55 18, 488	65, 470 36, 888 2, 467 0 82 11, 004
Total	116, 151	124, 204	135, 351	112, 508	83, 932	108, 792	165, 966	115, 911
Fruits: Dried: Cherries, dried or prepared: Italy	1,000 pounds 15,112 616 246	1,000 pounds 325 573 66	1, 000 pounds 107 227 50	1,000 pounds 76 743 47	1,000 pounds 512 158 8 610	1,000 pounds (2) 146 2	1,000 pounds 3 96 (2)	1,000 pounds 3 63 1
Total	15, 974	964	384	866	1, 280	148	99	67
Currants: GreeceOther Europe	12, 714 199	10, 800 56	9, 178 108	9, 950 13	8, 594 0	6, 652 0	6, 543 0	5, 951 0
Total Europe Other countries	12, 913 98	10, 856 178	9 , 2 86 96	9, 963 92	8, 594 16	6, 652 11	6, 543 62	5, 951 40
Total	13, 011	11, 034	9, 382	10,055	8, 610	6, 663	6, 605	5, 991
Dates: Iraq United Kingdom. Arabia Other countries.	32, 828 3, 032	6, 987 694 1, 747	3, 085 476 5, 153	1,350	34, 418 5, 544 990 1, 476	33, 492 6, 652 153 3, 604	16, 368 284	6, 819 10, 647
Total	49, 434	44, 128	54, 087	53, 250	42, 428	43, 901	47,822	42, 288
Figs: Turkey (Asia and Europe) Portugal. Greece Italy Other countries.	3, 305	16, 566 5, 933 2, 465 1, 943 4, 552	4, 404 4, 910 1, 358	934	2, 933 1, 018	6, 249 397 1, 181 780 88	969 709	121 963 796
Total	39, 504	31, 459	35, 563	21, 917	14, 825	8, 695	6, 038	6, 799
Fresh: Avocados: 9 Cuba Other countries_	5, 261 115		4, 612 139	6, 598 146	9, 544 2	10, 190 4	8, 681	5, 263 (2)
Total	5, 376	2, 330	4, 751	6, 744	9, 546	10, 194	8, 681	5, 263
Bananas: Central America Jamaica Mexico Cuba Colombia Other countries	13, 861 5, 928 2, 908 2, 073	6, 511 2, 730 1, 695	11, 725 4, 481 3, 467 1, 439	6, 200 4, 149 1, 171	11, 010 5, 520 3, 562 909	7, 905 4, 957 3, 163 1, 970	2, 668 2, 714	264 7,705 3,814 1,752
Total	57, 102	64, 029	63, 530	65, 909	57, 841	51, 785	45, 114	43,096

¹ Preliminary. Imports for consumption.
2 Less than 500.
7 Tons of 2,240 pounds.
8 Yugoslavia.
9 Compiled from Report of the Federal Horticultural Board, 1927 and 1928, Report of the Plant Quarantine and Control Administration, 1929 and 1930, and official records of the Bureau of Foreign and Domestic Commerce.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34.—Continued

A CLI To and a country from			3	Year ende	d June 30			
Article and country from which imported	1926–27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34 1
VEGETABLE PRODUCTS—con.								
Fruits—Continued. Fresh—Continued. Cherries, natural, sulphured, or in brine: Italy————————————————————————————————————	1,000 pounds 5,169 2 0 543 19	1,000 pounds 12,009 2,465 354 56 252	1,000 pounds 12,365 200 266 140 202	1, 000 pounds 20, 327 1, 346 410 279	1,000 pounds 7,528 85 253 60 0	1,000 pounds 4,446 351 1,106 31	1,000 pounds 871 2 788 19 22	1,000 pounds 749 0 901 30
Total	5, 733	15, 136	13, 173	22, 362	7,926	5,943	1, 702	1,684
Lemons: 11 Italy Other Europe	1,000 boxes 654 5	1,000 boxes 1,300 4	1,000 boxes 382 8	1,000 boxes 1,217		1,000 boxes 159 17	(2)	0
Total Europe Other countries	659 0	1,304	390	1, 227	350 0	(2) 176	(2)	(2)
Total	659	1,308	391	1, 229	350			
Olives, in brine: Spain Greece Other Europe	1,000 gallons 4,664 96 425	1,000 gallons 5,739 144 532	1,000 gallons 6,209 204 496	1,000 gallons 7,746 308 357	1,000 gallons 6,649 625 144	1,000 gallons 6,003 666 367	1,000 gallons 3,984 586 92	1,000 gallons 5,085 566 147
Total Europe Other countries	5, 185 27	6, 415 43	6, 909 46	8, 411 41	7, 418 11	7, 036 21	4, 662 13	5, 798 8
Total	5, 212	6, 458	6, 955	8, 452	7, 429	7, 057	4, 675	5, 806
Grains, flours, etc.: Barley malt: Canada	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds 22,369 657	1,000 pounds 34,551 131	1,000 pounds 50, 515 1, 209	1,000 pounds 129,936 9,835
Canada Czechoslovakia Czechoslovakia Germany Hungary Mexico Other countries					347 (3) 0 34	492 0 0 3	334 0 0 341	8, 543 8, 954 3, 354 8, 573
Total	12 895	12 828	11 962	12 1, 006	23, 407	35, 177	52, 399	169, 195
Rice, cleaned, excluding patna:	19, 741	20, 786	17, 934	15, 094	15, 878	11,011	8,777	7, 639
Hong Kong Mexico Italy Netherlands British India	3, 695 5, 837 465	3, 971 2, 139 1, 061	1, 022	1, 209 1, 310 1, 625	1, 391 2, 419 1, 059	1, 072 1, 233 724	5,009 970 292 1,022	1,613 846 1 1 349
Germany	2, 912	168	1		209		1,429	2,831 1,740
Total	54, 366	33, 842	25, 167	20, 951	26, 826	17, 150	17,593	15, 179
Rice, patna: Netherlands British India Other countries		0 0	' () () 10	321	300
Total	18 1, 22	1,820	2, 329	2, 176	2, 116	1,087	846	1, 465
Rice, uncleaned: Mexico	.) 44	2,316 428 1 428	1, 441 321 66	1,495 694 423	5, 011 4 419 656 6 56	51	(1)	2, 237 825
Total	11. 77							

Preliminary. Imports for consumption.
 Less than 500.
 Includes Albania prior to Jan. 1, 1932.
 Boxes of 74 pounds net.
 Imports for consumption. Not available by countries.
 January-June.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

Article and country from			3	Year ende	d June 30			
which imported	1926-27	1927-28	1928-29	1929-30	1930-31	1931–32	1932-33	1933-341
VEGETABLE PRODUCTS—CON.								
Grains, flours, etc.—Continued Rice, flour, and meal: Mexico. Japan. Hong Kong. China. France. British India. Germany. Siam. Netherlands. Other countries.	1,000 pounds 2,307 469 96 36 3 0 (2) 0 0	1,000 pounds 1,981 442 100 38 3 0 0 21 11	1,000 pounds 508 504 62 68 5 0 15 0 0	1,000 pounds 340 472 86 51 7 0 (2) 0 100 29	1,000 pouuds 60 24 30 (1) 0 (2)	1,000 pounds 352 123 36 28 0 (1) 0 0	1,000 pounds 0 408 86 26 14 67 344 0 660 34	1,000 pounds 2,756 418 88 38 234 1,304 3,083 1,592 10,472 1,958
Total	2, 972	2, 606	1, 239	1, 085	603	556	1,639	21, 943
Wheat: Canada Other countries	1,000 bushels 13, 234 1	1,000 bushels 15,706 0	1,000 bushels 21, 429 1	1,000 bushels 12,948 0	1,000 bushels 19,053	1,000 bushels 12,885 (²)	1,000 bushels 9,379 (²)	1,000 bushels 11,482
Total	13, 235	15, 706	21, 430	12, 948	19, 054	12, 885	9, 379	11, 490
Wheat flour: CanadaUnited Kingdom Other countries	Barrels 5, 344 474 238	Barrels 3, 474 49 2, 206	Barrels 2, 273 45 285	Barrels 889 651 163	Barrels 630 363 169	Barrels 145 43 84	Barrels 560 44 77	Barrels 770 (2) 56
Total	6, 056	5, 729	2, 603	1, 703	1, 162	272	681	826
Nuts: Almonds, shelled: Spain ItalyFrance Other Europe	1,000 pounds 8,389 6,076 541 165	1,000 pounds 9,637 7,703 306 197	1,000 pounds 10,399 6,578 286 273	1,000 pounds 8, 902 8, 912 136 118	1,000 pounds 6, 432 6, 348 223 61	1,000 pounds 4,830 3,287 163 5	1,000 pounds 3,386 1,321 53	1,000 pounds 2,600 632 101 6
Total Europe	15, 171 528	17, 843 414	17, 536 570	18, 068 236	13, 064 177	8, 285 51	4, 761 102	3, 339 71
Total	15, 699	18, 257	18, 106	18, 304	13, 241	8, 336	4, 863	3, 410
Almonds, not shelled: Spain Italy France Other Europe	158 180 154 7	229 98 131 5	1, 068 73 474 267	4, 530 375 518 61	3 18 54 0	1 7 0 0	141 1 0 (2)	0 5 0
Total Europe Other countries	499 139	463 1	1, 882 9	5 , 4 84 19	75 3	8	142 2	5 1
Total	638	464	1, 891	5, 503	78	9	144	6
Brazil, shelled: 14 Brazil			13 224 13 808 13 28	1, 586 2, 500 4	2, 529 645 0	6, 540 978 0	4, 856 415 25	6,719 129 172
Total			¹³ 1, 060	4, 090	3, 174	7, 518	5, 296	7,020
Brazil, not shelled: 18 Brazil United Kingdom Other countries	41, 999 341 517	12, 575 771 93	32, 713 2, 913 151	18, 820 197 62	20, 684 2, 022 24	15, 736 740 10	16, 521 941 0	16, 347 446 0
Total	42,857	13, 439	35, 777	19, 079	22, 730	16, 486	17, 462	16, 793
Cashew nuts: 18 British India France Haiti, Republic of Other countries				13 3, 277 13 184 13 4 13 69	7, 178 21 110 128	12, 948 38 43 137	7, 057 0 3 91	13,741 3 32
Other countries				13 3, 534	7, 437	13, 166	7, 151	293
1 Proliminary Imports for								

¹ Preliminary. Imports for consumption.
2 Less than 500.
23 January-June.
24 Included with "not shelled" prior to Jan. 1, 1929.
25 Includes "shelled" prior to Jan. 1, 1929.
26 Included with "other edible nuts" prior to Jan. 1, 1930.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

Article and country from			7	Year ende	d June 30			
which imported	1926–27	1927-28	1928-29	1929–30	1930-31	1931-32	1932-33	1933-341
VEGETABLE PRODUCTS—con.								
Nuts—Continued. Filberts, shelled: France. Italy. Spain. Germany. Other Europe.	1,000 pounds 1,014 732 421 277 281	1,000 pounds 1,206 348 329 22 77	1,000 pounds 1,027 746 1,764 175 63	1, 000 pounds 178 752 2, 888 49 25	1,000 pounds 334 345 37 334 118	1,000 pounds 91 335 428 0 74	1,000 pounds 52 312 240 0 16	1,000 pounds 27 193 357 0 1
Total Europe Turkey (Asia and Europe)	2, 725 2, 133	1, 982 4, 618	3, 775 1, 800	3, 892 609	1, 168 3, 417	928 1,422	620 2,686	578 1, 448
Other countries	92	. 0	31	2	11	0	0	0
Total	4, 950	6, 600	5, 606	4, 503	4, 596	2, 350	3,306	2, 026
Filberts, not shelled: Italy Spain Other Europe	9, 296 49 291	6, 687 1, 936 1, 334	11, 053 818 243	4, 548 954 254	3, 987 423 229	6, 293 73 11	5, 717 83 0	1, 637 583 91
Total Europe	9, 636	9, 957	12, 114	5, 756	4, 639	6, 377	5, 800	2, 311
Turkey (Asia and Europe)Other countries	54 132	1, 265 22	20 0	0	820 200	0	0	240 0
Total	9, 822	11, 244	12, 134	5, 756	5, 659	6, 377	5, 800	2, 551
Peanuts, shelled: China. Kwantung. Japan. Hong Kong. Philippine Islands Other countries.	44, 729 962 267 15 0 879	49, 986 1, 533 110 13 0 3, 142	23, 987 1, 682 330 58 0 549	7, 140 544 3 9 351 305		341 25 1 20 382		1 12 241
Total	46, 852		26, 606	8, 352	6, 505	770	109	260
Peanuts, not shelled: China Japan. Hong Kong Kwantung Other countries.	3,812 245 50 0 303	12, 339 509 58 100	4, 680 360 108 200 361	212 67	343 126 255	156 188 80	96 75	118 79 0
Total	4, 410	13, 498	5, 709	2, 910	4, 283	1, 149	195	210
Walnuts, shelled: France Other Europe	8, 995 3, 007	12, 551 989	9, 308 2, 033	11, 357 722	4, 679 2, 090	5, 094 1, 24£	2, 729 847	1, 595 386
Total Europe China Other countries	12, 002 8, 144 833	1,952	5,052	4,364	8, 216	6, 339 4, 129 263	1.768	3 2,969
Total	20, 979	16, 015	17, 956	17, 278	16, 326	10, 731	5, 778	5, 547
Walnuts, not shelled: Italy France Other Europe		4, 558 2, 244 144	2,720	4,620 833 117	4//	1, 20	1,802	y 39
Total Europe China Other countries	5,870	2, 531	10, 557 4, 578 449	1,419	504	8	4.2	2 (2)
Total	25, 706	10, 314	15, 581	7, 024	3, 55	5, 505	2, 33	321

¹ Preliminary. Imports for consumption. ² Less than 500.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

Article and country from which imported 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32 1932-33 1933-34	, Diales, 0g	Country	108, 102	0-27 10	1000-0	74	itinueu		
Which imported	Article and country from				Year ende	ed June 30)		
Olive, edible: Coconut, product of Phill pounds 228, 778 275, 508 3775, 509 315, 442 278 20 7, 508 335, 105 200, 700 335, 700 335	which imported	1926–27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34
Olive, calible: 15,870 45,145 62,202 71,205 45,661 47,115 45,841 32,902 72,805 73,803 21,712 21,377 73,000 74,000 7	VEGETABLE PRODUCTS-con.								
	Oils, vegetable: Coconut, product of Phil- ippine Islands	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds
Total S7, 922 70, 130 88, 118 98, 446 73, 794 78, 689 72, 365 67, 433 Olive, inedible:	Italy Spain France	21, 682 4, 705	45, 145 17, 797 5, 335 954	62, 202 16, 910 6, 182 1, 527	2,959	45, 661 23, 675 2, 335 542	47, 116 27, 823 2, 395 204	45, 841 21, 712 1, 920 1, 556	32, 926 21, 379 2, 350 610
Olive, inedible: Italy	Total Europe Other countries	86, 393 1, 529	69, 231 899	86, 821 1, 297	95, 843 2, 603	72, 213 1, 581	77, 538 1, 151	71, 029 1, 336	57, 265 168
Italy	Total	87, 922	70, 130	88, 118	98, 446	73, 794	78, 689	72, 365	57, 433
Total	ItalySpain Greece Portugal	2, 206 783	29, 244 12, 333 2, 783 1, 675 525	35, 889 9, 575 6, 856 2, 122 325	425	27, 364 13, 987 2, 579 1, 038 25	3, 030 1, 445	1,625	1, 122
Palm oil: Netherlands Indies. Netherlands Indies. So, 762 British West Africa. 50, 762 British Malaya. 2, 077 1, 1002 1, 1907 3, 314 China. 10, 493 22, 855 33, 655 58, 738 84, 429 91, 516 145, 694 137, 061 18, 635 63, 840 40, 336 63, 840 11, 686 36, 949 31, 655 64, 832 32, 769 38, 292 45, 674 33, 314 25, 961 18, 963 11, 868 3, 841 18, 241 Total. 110, 184 183, 977 228, 230 237, 860 313, 940 221, 155 253, 638 248, 456 Soybean: Kwantung. 15, 759 13, 546 China. 1, 803 3891 1, 520 1, 203 1,	Total Europe Algeria and Tunisia Other countries		46, 560 1, 296 107	54, 767 4, 103 807	53, 098 6, 877 198	44, 993 6, 753 666	54, 399 4, 110 359	9, 527	10, 315
Netherlands Indies	Total	46, 807	47, 963	59, 677	60, 173	52, 412	58, 868	52, 793	46, 515
Soybean:	Netherlands Indies British West Africa Belgian Congo British Malaya	10, 493 50, 762 17, 187 2, 077 29, 665	26.406	33, 655 122, 315 36, 949 1, 997 33, 314	58, 738 118, 368 31, 655 3, 148 25, 951	84, 429 151, 726 54, 882 3, 950 18, 953	91, 516 83, 305 32, 769 1, 699 11, 866	63, 840 38, 229 2, 034	40, 336 45, 674 7, 144
Kwantung	Total	110, 184	183, 977	228, 230	237, 860	313, 940	221, 155	253, 638	248, 456
Tung oil: China	Kwantung China Japan	1,803 4,033	891 41	1,520 1,729	0 121	0	(2) 723	0	0 45
Hong Kong		23, 553	14, 562	17, 172	13, 332	5, 915	3, 085	1	2, 512
Oilseeds: Copra, not prepared: Philippine Islands 330, 946 336, 920 386, 567 299, 193 311, 781 229, 346 244, 246 499, 057 Netherlands Indies 10, 579 5, 867 27, 144 29, 206 76, 495 88, 309 168, 633 100, 311 British Malaya 59, 746 40, 331 84, 700 42, 114 57, 619 64, 660 34, 590 37, 966 British Oceania 19, 131 19, 941 37, 685 43, 778 48, 774 25, 561 26, 062 12, 429 French Oceania 29, 188 25, 273 21, 306 22, 662 21, 482 12, 791 16, 166 2, 716 Australia 37 17, 445 55, 983 35, 455 30, 077 13, 096 0 4 20, 114 17, 325 13, 388 5, 475 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Hong Kong	12, 223	75, 141 7, 367 1, 120	101, 256 13, 205 779	5, 828	95, 927 3, 475 0	6, 171	2,029	11, 527
Copra, not prepared: Philippine Islands	Total	102, 428	83, 628	115, 240	130, 941	99, 402	81, 346	83, 858	121, 897
Flaxseed: 1,000 bushels bushels bushels bushels bushels bushels bushels bushels Canada. 25,581 16,067 20,927 19,226 6,102 13,342 5,495 12,736 Uruguay. 25 0 0 38 0 221 0 0 550 0 100 0 500 0 500 0 0 500 0 0 500 0 0 500 0 0 500 0 0 500 0 0 500 0 0 0 500 0 0 0 500 0 0 0 500 0 0 0 500 0 0 0 500 0 0 0 0 500 0 0 0 0 500 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copra, not prepared: Philippine Islands Netherlands Indies British Malaya British Oceania French Oceania Australia New Zealand	10, 579 59, 746 19, 131 29, 188 37	25, 273 17, 445 76	37, 685 21, 306 55, 988 4, 281	35, 455 17 325	30, 077 13, 838	0, 210	168, 683 34, 590 26, 082 16, 166 0	100, 311 37, 966 12, 429 2, 716 4
Argentina	Total	454, 546		629, 937	493, 456	565, 397	445, 741	494, 821	653, 182
Total. 24, 224 18, 112 23, 494 19, 652 7, 813 13, 850 6, 213 17, 901	Argentina Canada Uruguay British India Other countries	5ushels 20, 581 3, 566 23 0	16, 057 2, 025 0 0	bushels 20, 927 2, 528 38 0	bushels 19, 236 355 0 59	bushels 6, 102 1, 490 221 0	bushels 13, 342 506 0 2	bushels 5, 495 718 0 0	bushels 12, 736 176 503 4, 311
	Total	24, 224	18, 112	23, 494	19, 652	7, 813	13, 850	6, 213	17, 901

¹ Preliminary. Imports for consumption.

³ Less than 500.

Table 450.—Imports (general) of principal agricultural products into the United States, by countries, 1926-27 to 1933-34—Continued

	Year ended June 30								
Article and country from which imported									
winen imported	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-341	
VEGETABLE PRODUCTS—Con.									
• "	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Pepper, unground: Netherlands Indies	pounds 6,636	pounds 6. 446	pounds 9, 205	pounds 17, 250	pounds 19, 351	pounds 23, 431	pounds 25, 223	pounds 36, 605	
British India	11 048	6, 446 7, 907	6, 218	7, 505	6, 995	4, 754	2, 517	3, 852	
British Malaya	3, 577 2, 287 280	5, 292 2, 831	3, 435 1, 469	3, 238 870	1, 499 1, 409	1, 554 2, 770	365 1, 197	323 2, 045	
United Kingdom British Malaya French Indo-China Other countries	280	44	2	261	1,964	538) 0	337	
Total	1, 389 25, 217	1, 458 23, 978	5, 334 25, 663	1, 864 30, 988	31, 299	33, 188	29, 470	168 43, 330	
Sugar, raw, cane: 17	Tons 3, 953, 360	Tons 3, 399, 294	Tons 4, 108, 503	Tons 2, 769, 371	Tons 2, 404, 979	Tons 2, 350, 218	Tons	Tons 1, 289, 159	
Philippine Islands	427, 747	612, 859	604, 695	808, 878	859, 467	874, 374	1, 225, 019	1, 458, 555	
Cuba	35, 245	8, 617 23, 791	7, 983 31, 121	4, 837 58, 002	3, 578 19, 197	4, 075 33, 575	5, 037 29, 014	3, 623 67, 186	
Total	4, 420, 424	4, 044, 561	4, 752, 302	3, 641, 088				2, 818, 523	
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Tea:	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds	
Japan	28, 430 22, 136	25, 399 20, 380	27, 329 23, 608	22, 048 21, 578	21, 416 23, 310	22, 927 23, 340	24, 209 17, 809	24, 799 18, 274	
Japan United Kingdom Ceylon China British India Notherlands Indies	16, 578	16, 326	16,893	19, 047	16, 895 6, 704	16, 855	16, 100	12.692	
British India	11, 655 8, 059	10, 131	8,878 7,688	7, 405 9, 217	10,612	7, 329 9, 886	6, 490 12, 033	7,430	
Netherlands Indies	7,660	5, 398	5, 358	4,891	5, 184	6,637	14,848	12,904	
Other countries	2,004		2, 881	2, 182		3, 485	<u> </u>		
Total	97, 402	90, 099	92, 635	86, 368	87, 148	90, 459	94, 808	87, 691	
Tobacco, leaf, unmanufac- tured: Product of the Philippine									
Islands	1, 117	2, 541	4, 678	4, 007	4, 278	4, 207	1,842	1, 925	
For cigar wrappers: Netherlands	6, 358	6, 218	6,095	8, 415	2, 988	3, 365	2, 222	2,070	
Netherlands Other countries	115	126	117	126		52	106	143	
Total	6, 473	6, 344	6, 212	8, 541	3, 039	3, 417	2, 328	2, 213	
All other leaf:									
Greece	28, 383 24, 233		16, 741 22, 116	13, 400 21, 773	18, 913 18, 299			14, 706 11, 371	
Turkey (Asia and			1	1	1		i	1	
Europe) Italv	15, 355 13, 708	13, 743	11, 286	6, 162 6, 563	12, 974 12, 124	13, 293 13, 931	17, 769 8, 178	12, 788 6, 983	
Cuba Cuba Turkey (Asia and Europe) Italy Germany Other countries	973 847	1, 242	305 1, 284	391 87	71	178	51 88	53	
Total	83, 499								
,									
Onions: 18	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 busheis	1,000 busheis	
Spain Egypt Chile	1, 084	701		768					
Chile	76	213	134	49	10	234	il T	41	
Italy Netherlands	. 1 00		145 580	45	24	20			
Other countries	118							4	
Total	2, 298	1, 399	2, 050	918	214	664	73	80	
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
India rubber, crude: British Malaya	Dounds	pounds 534, 834	pounds 811, 843	pounds 788, 59	Pounds 733, 419	759, 029	pounds 561, 782	pounds 907, 092	
Netherlands Indies	_ 156, 773	170, 16	1 215, 863	195, 297	164, 690	157, 966	138, 500	3 195, 9 55	
Ceylon United Kingdom	- 89, 874 - 55, 154	73, 54: 5 110, 57	2 112, 257 5 50, 938	118, 42 7, 24	86, 983 27, 970	79, 52: 65, 71	66, 490	81,030 1,516	
United Kingdom Other countries	57, 91	46, 92	36, 02	27,84	19, 134	21, 40	8, 547	14, 829	
Total	962, 46	7 926, 04	1, 226, 929	1, 137, 40	5 1, 032, 198	1, 083, 644	776, 429	1, 200, 422	

¹ Preliminary. Imports for consumption. 2 Less than 500. 17 Tons of 2,000 pounds. 18 Bushels of 57 pounds.

Bureau of Agricultural Economics, Foreign Agricultural Service Division. Compiled from Monthly Summary of Foreign Commerce of the United States, January and June issues, 1927-32; official records of the Bureau of Foreign and Domestic Commerce and of the United States Tariff Commission.

Table 451.—Oil cake and oil-cake meal: International trade, average 1925-29, annual 1931-33

				Calenda	r year			
Country	Average	1925–29	19	31	19	32	193	31
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPOET- ING COUNTRIES United States	672, 830 584, 664 356, 706 336, 094 270, 571	1,000 pounds 196, 587 0 246 3 75, 294 0 603	1,000 pounds 910, 992 724, 454 612, 566 416, 278 461, 485 274, 466 259, 048 190, 515	1,000 pounds 40,356 0 78 0 170,810 931 163	1,000 pounds 640, 889 952, 118 656, 528 411, 634 372, 931 2 132, 973 173, 797 185, 731	1,000 pounds 38,790 0 40 0 234,852 6,350	1,000 pounds 760, 478 905, 013 648, 930 242, 679 359, 525 239, 486 175, 845	1,000 pounds 57, 811 0 22 4, 544 243, 826 0 3, 116
Argentina. Netherlands Indies. Peru. Peru. Brazil Canada. Bulgaria. Spain British Malaya. Chile. Australla ⁵ Latvia. Estonia.	139, 227 135, 473 70, 465 54, 650 45, 464 37, 520 28, 199 14, 301 7, 725 6, 921	0 0 0 0 15, 863 10 3, 754 11, 530 1 2, 404 0 3, 694	199, 530 168, 550 79, 112 76, 364 29, 817 77, 414 5, 096 13, 512 5, 490 12, 088 2, 393 3, 162	9, 202 30 18, 120 11, 487 0 262 1, 360 647	214, 871 156, 245 69, 552 88, 510 23, 307 67, 264 2, 147 18, 240 7, 841 23, 219 1, 735	0 0 0 0 6,743 11 16,229 12,031 0 8 223 350	195, 134 163, 908 56, 140 74, 615 12, 196 56, 021 5, 599 35, 502 10, 691 22, 614 1, 777 754	0 0 0 0 9, 644 0 7, 617 13, 120 0 16 701 1, 350
Total	4, 550, 991	309, 996	4, 522, 332	253, 446	4, 200, 474	315, 627	3, 966, 907	341, 767
PRINCIPAL IMPORT- ING COUNTRIES								
Denmark Germany United Kingdom Netherlands Japan Belgium Sweden Finland Irish Free State Czechoslovakia Switzerland Norway Poland Ceylon Austria Hungary	768, 849 167, 379 120, 322 43, 218 83, 170 12, 655 0 0 54, 113 13, 977 28, 545 25, 252 1, 411 15, 310	1, 558, 619 1, 004, 314 1, 001, 966 680, 253 346, 986 324, 675 305, 454 183, 687 111, 617 76, 127 63, 263 56, 356 42, 690 31, 822 16, 411	40, 536 440, 686 162, 570 171, 637 26, 577 123, 706 23, 704 0 68, 63, 703 1, 962 26, 069 41, 511 926 18, 617	1, 547, 206 1, 129, 400 980, 569 536, 139 322, 589 466, 498 393, 639 95, 788 127, 082 136, 489 60, 246 99, 389 35, 637 29, 670 46, 482 36, 763	69, 465 125, 970 156, 444 144, 979 29, 636 133, 743 26, 462 0 0 63, 096 12, 649 9, 613 42, 729 48, 575 8, 331	1, 127, 958 1, 349, 844 921, 614 369, 123 250, 846 432, 928 250, 590 66, 399 107, 678 82, 121 76, 780 35, 633 25, 591 28, 925 52, 259 20, 449	62, 167 61, 107 84, 995 75, 132 41, 306 145, 508 27, 581 0 0 49, 96 49, 347 57, 011 14, 904	1, 151, 603 951, 526 6849, 930 659, 765 285, 313 558, 967 251, 623 143, 686 63, 215 84, 423 39, 778 34, 143 12, 35% 30, 111 49, 628 7, 120
Total	1, 361, 973	5, 939, 319	1, 169, 887	6, 042, 986	871, 737	5, 198, 738	690, 410	5, 173, 198

Bureau of Agricultural Economics; official sources.

The class called here "Oil cake and oil-cake meal" includes the edible cake and meal remaining after making oil from such products as cottonseed, flaxseed, peanuts, corn etc. Soybean cake is not included in this table,

Preliminary.
 Does not include figures for Manchuria after June 1932.

Fores not measure near the restaurance of systems and Madura only.
 Forest and Madura only.
 Forest near the systems of the system

Table 452.—Vegetable oils: Exports from the United States, 1909-10 to 1933-34

							•
Year beginning July	Corn	Cotton- seed 1	Linseed	Cocoa butter	Coconut	Peanut	Scybean
1909–10 1910–11	1,000 pounds 11, 299 25, 371 23, 866	1,000 pounds 223, 955 225, 521 399, 471	1,000 pounds 1,713 1,314 1,852			1,000 pounds	
1912-13 1913-14 1914-15 1915-16	19, 839 18, 282 17, 790 8, 968	315, 233 192, 963 318, 367 266, 512 158, 912	13, 004 1, 794 9, 091 5, 356 9, 012				
1917-18 1918-19 1919-20 1920-21 1920-22	1, 831 1, 095 12, 483 6, 919	100, 780 178, 709 159, 400 283, 268 91, 615	8, 909 8, 222 8, 523 4, 210 2, 744			24, 922 1, 595 1, 802	
1922-23 1923-24 1924-25 1925-26 1926-27	5, 224 4, 196 3, 586 2, 927	64, 292 39, 418 53, 261 59, 015 57, 580	3, 105 2, 628 2, 405 2, 335 2, 738	957 888 1,577 1,766 290	12, 993 19, 423 17, 890 15, 444 19, 826	188 168 (3)	2, 495 2, 892 579 623
1927-28 1928-29 1928-30 1930-31 1931-32	329 323 363 915	61, 470 29, 531 31, 998 26, 353 40, 985	2, 221 2, 020 2, 129 1, 298 873	1,897 1,010 347 463 321	22, 358 24, 556 30, 225 19, 963		7, 514 8, 241 5, 509 4, 410
1932–33 1933–34 ⁴	901	44, 427 23, 189	781 696	1, 424 3, 557	25, 410		2, 209

Crude and refined not separately reported 1909-10 to 1920-21; from 1921-22 to date the crude and refined figures have been added without converting.
 Not separately reported prior to July 1919.
 Included with "Other vegetable oils and fats", 1924-25 to date.

Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1910–18; Monthly Summary of Foreign Commerce of the United States, June issues, 1919–34.

Table 453.—Vegetable oils: Imports into the United States, 1909-10 to 1933-34

Year be- ginning July	Cas- tor ¹	Tung	Cocoa butter	Coco- nut	Cot- ton- seed 1	Lin- seed	Olive	Palm	Palm ker- nel	Pea- nut	Pe- rilla²	Rape- seed	Soy- bean
1909-10 1910-11 1910-11 1911-12 1912-13 1913-14 1914-15 1916-17 1917-18 1918-19 1920-21 1922-23 1922-23 1922-24 1924-25 1925-28 1925-28 1925-28 1926-27 1927-28 1928-29 1928-30 1930-31 1931-32	57 56 42 1, 513 2, 025 2, 590 9, 401 3, 792 2, 171 792 2, 171 308 2, 271 308 401 1, 398 164 1, 398 1, 271 1, 202 1	35, 757 44, 975 36, 993 37, 052 37, 262 51, 481 36, 118 46, 625 79, 602 33, 300 55, 572 89, 392 80, 898 84, 861 102, 428 83, 628 115, 240 130, 942 99, 402 81, 348 81,	4, 279 6, 075 3, 603 2, 839 150 400 166 (7) 3 42 915 7, 123 3, 010 1, 169 18 18 17 270 270 270 270 270 270 270 270 270 27	46, 371 50, 504 74, 386 63, 135 66, 008 79, 223 259, 195 344, 728 271, 540 173, 889 230, 236 220, 121 250, 121 250, 121 250, 123 377, 288, 776 273, 309 377, 287, 76 377, 288, 276, 600 377, 288, 276, 600	17, 293 15, 162 17, 181 13, 703 14, 291 20, 410 24, 165 1, 315 (7) 45 (7) 0 283 6, 396 (7) (7) 2 1 (7)	1, 303 1, 442 4, 015 376 831 7, 424 34, 128 168, 705 56, 764 17, 340 23, 587 16, 733 1, 331 6, 677 5, 416 228	60, 820 61, 381 19, 889 32, 983 52, 716 35, 288 83, 337 117, 262 113, 409 118, 071 118, 093 147, 794 158, 618 126, 202 1137, 556	57, 100 47, 159 50, 229 58, 040 31, 486 40, 497 36, 074 27, 405 19, 281 50, 165 31, 176 39, 159 118, 816 86, 784 110, 184 110, 184 110, 184 110, 184 122, 254 237, 860 237, 860 231, 840 221, 185	(4) 25, 3569 34, 328 4, 906 6, 761 1, 857 19 1, 945 2, 769 	8, 968 10, 029 6, 397 11, 063 22, 696 62, 166 62, 165, 443 18, 163 183	69 66 443 1, 016 	19, 209 8, 137 22, 923 15, 683 9, 221 8, 789 10, 139 13, 274 15, 513 14, 691 15, 658 20, 480 19, 530 19, 530 11, 137 14, 479 18, 641	162, 690 336, 825 236, 805 195, 774 49, 331 8, 283 35, 285 17, 631 120, 434 17, 401 22, 532 14, 562 17, 172 13, 333 5, 915 3, 085
1932-33 1933-3418	1, 130 796	83, 858 118, 797	9	260, 700 353, 105	0			253, 638 248, 456			32, 898	13, 031	2, 512

¹ Imports for consumption. (See introduction to Agricultural Statistics.)

² Not separately reported prior to 1914-15; 1914-15 to 1917-18 and 1927-28 are imports for consumption;

1918-19 to 1926-27 not available; 1928-29 to 1932-33 are general imports.

³ Includes peanut oil.

⁴ Included in all other fixed or expressed.

⁵ Included in turn oil.

Included in tung oil.

Includes hempseed.

⁷ Less than 500 pounds. 8 Preliminary.

Bureau of Agricultural Economics; compiled from Foreign Commerce and Navigation of the United States, 1910-13: Monthly Summary of Foreign Commerce of the United States, June issues, 1919-34.

Table 454.—Copra and coconut oil: International trade, average 1925–29, annual 1931-33

COPRA

			COP	ILA.				
				Calend	lar year			
Country	Averag	e 1925-29	1	931	1	932	19	33 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Import
PEINCIPAL EXPORT- ING COUNTRIES Netherlands Indies. Philippine Islands. British Malaya. Ceylon. Fiji. Solomon Islands? Mozambique. Genzibar Fonga. Samoa, West. Fanganyika. Trinidad and Tobago- Hilbert and Ellice Islands. Total. PEINCIPAL IMPORT- ING COUNTRIES United States termany. Fernang. Fernang. Fernang. Fernang. Fernang. Fernang. Fernang. Fernang. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands. Fetherlands.	406, 191 386, 704 239, 555 62, 601 48, 372 40, 469 36, 278 32, 048 30, 179 10, 482 2, 181, 262 0 777 145 791	1,000 pounds 6 1,107 169,135 502 0 0 0 11,050 0 0 1,193 0 182,903 469,115 442,523 384,155 308,530 124,434 122,840 71,419	1,000 pounds 794,034 384,128 420,750 210,258 37,984 47,518 48,385 20,001 24,779 16,204 19,485 14,668 2,064,467	1,000 pounds 323 710 194,938 3 326 0 0 0 115 0 0 1.555 0 197,967 457,947 430,806 191,077 180,333 156,663	1,000 pounds	1,000 pounds 156 314 223,897 3 293 3 293 0 0 0 1.802 0 0 226,679 288,007 389,507 389,507 138,664 215,024 165,781	1,000 pounds 231,939 680,678 471,710 144,121 50,617 27,828 1,425,751 0 1,793 38 269 0 0	1,000 pounds 2 224, 09
aly orway ustria weden elgium atvia ritish India	9 0 6 0 113 0 1, 284	61, 352 43, 568 28, 765 24, 518 18, 169 3, 496 2, 926	0 17 0 0 0 203	25, 058 74, 598 59, 519 14, 822 11, 931 11, 944 3, 239	0 10 0 0 0 212 0	27, 208 81, 332 75, 211 15, 986 11, 460 9, 157 4, 951	0 6 0 0 30	86, 072 75, 539 19, 670 41, 044 14, 548 5, 038
Total		2, 920	879 I	2, 453 , 940, 334	1,079 1	33, 083	87	59, 123 2, 151, 088

COCONUT OIL

PRINCIPAL EXPORT- ING COUNTRIES Philippine Islands. 308, 196 0 363, 693 0 252, 508 0 351, 900 0 Netherlands. 121, 614 9, 639 87, 578 4, 584 69, 937 12, 805 52, 997 11, 571 Netherlands Indies. 42, 689 10, 562 9, 625 11, 309 35, 900 11, 571 Netherlands Indies. 42, 689 10, 562 9, 625 11, 309 35, 900 11, 571 Netherlands Indies. 42, 689 10, 562 9, 625 11, 309 35, 900 11, 571 France. 33, 181 11, 254 19, 796 14, 899 7, 794 21, 801 21, 617 7, 467 British Malaya. 20, 223 558 27, 566 560 27, 747 1, 019 41, 747 2, 395 Total. 634, 752 41, 852 627, 972 42, 753 526, 844 61, 482 594, 133 44, 148 United States. 21, 691 294, 849 18, 083 325, 175 Belgium 1 5, 924 34, 156 5, 312 16, 398 5, 800 14, 528 4, 683 10, 326 Denmark. 3, 365 32, 563 901 41, 295 325 45, 836 7, 895 35, 835 890 Denmark. 3, 365 32, 563 901 41, 295 325 45, 836 7, 895 35, 835 829, 114, 915 British India. 1, 037 12, 054 43, 371 22, 178 228 65, 889 306 57, 432 Egypt. 1 11, 137 0 2, 410 0 1, 173 New Zealand. 61 8, 623 79, 90 17, 886 527, 695 94, 845 446, 697 96, 245 468, 755									
Netherlands	PRINCIPAL EXPORT- ING COUNTRIES						Ī T	T	T
United States 21, 691 294, 849 18, 088 325, 175 23, 558 249, 117 26, 168 316, 078 Belgium 5 5, 924 34, 156 5, 312 16, 398 5, 209 56, 134 7, 548 29, 901 Sweden 5, 924 34, 156 5, 312 16, 398 5, 800 14, 528 4, 693 10, 326 Denmark 25, 414 27, 069 43, 379 15, 394 325 45, 836 7, 895 35, 835 British India 1, 037 12, 054 377 121, 178 286 65, 889 306 57, 432 114 11, 470 0 3, 925 1 3, 100 0 4, 110 144 1295 144 1295 144 1295 145 145 145 145 145 145 145 145 145 14	Netherlands Ceylon Netherlands Indies Germany France British Malaya Australia ³	121, 614 78, 807 42, 689 33, 181 29, 644 20, 223 398	9, 639 13 10, 562 11, 254 10, 076 58 250	87, 578 107, 831 9, 625 19, 796 16, 221 22, 756 472	4, 584 3 11 11, 309 14, 899 11, 385 560 5	69, 937 114, 804 35, 900 7, 794 13, 892 27, 747 3, 962	12, 805 8, 900 21, 801 16, 951 1, 019 0	52, 997 118, 876 216, 179 2, 847 9, 587 41, 747	11, 571 2 0 7, 467 22, 715 2, 395
United Kingdom. 7, 473 105, 560 6, 733 96, 385 6, 229 56, 134 7, 548 29, 901 Sweden. 3, 365 32, 563 901 41, 295 325 45, 836 7, 895 10, 326 Denmark. 25, 414 27, 069 43, 379 15, 394 58, 621 9, 601 49, 624 8, 379 Egypt. 1 11, 470 0 3, 925 12, 178 236 65, 889 36, 889	ING COUNTRIES								22, 140
527, 895 94, 845 446, 697 96, 245 469 755	United Kingdom Belgium 5 Sweden Denmark British India Egypt Italy 6 Rumania New Zealand Canada	7, 473 5, 924 3, 365 25, 414 1, 037 1 102 61 0	105, 560 34, 156 32, 563 27, 069 12, 054 11, 470 8, 724 51, 623 896 739	6, 733 5, 312 901 43, 379 371 0 76 5 0	96, 385 16, 398 41, 295 15, 394 21, 178 3, 925 3, 982 1, 184 1, 042 1, 737	6, 229 5, 800 325 58, 621 236 1 75 0	56, 134 14, 526 45, 836 6, 061 65, 889 3, 106 2, 026 482 1, 110	7, 548 4, 693 7, 895 49, 624 306 0 11	29, 901 10, 326 35, 835 8, 379 57, 432 4, 110 2, 870
	1 Preliminary	00,000	529, 703	74, 865	527, 695	94, 845	446, 697		

¹ Preliminary.
2 Java and Madura only.
2 International Yearbook of Agricultural Statistics.
4 Year ended June 30.
5 Includes some other oils.
6 4-year average.

Bureau of Agricultural Economics; official sources except where otherwise noted.

Table 455.—Rubber: International trade, average 1925-29, annual 1931-33

				Calend	ar year			
Country	Average	1925-29	19	31	19	32	193	31
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES British Malaya	593, 755 133, 621 46, 638 23, 532 20, 530 14, 419 8, 440 7, 474 3, 947 3, 818 3, 242 2, 230 2, 046 1, 930 1, 756 889 526 179	0 11, 137 0 100 0 565 41 0 1 3 201 3 211 3 30 0 0 0 0	1,000 pounds 1,162,585 653,125 138,005 23,096 18,999 26,237 13,945 0 3,988 4,080 1,935 3,711 2,104 221 81 11	1,000 pounds 280, 972 0 6, 991 106 0 1, 596 0 0 0 3 3 1, 893 0 0	1,000 pounds 1,008,623 533,031 111,242 111, 195 8,733 22,202 2 12,048 5,79 31,463 5,79 3 841 203 3 350 1,882 6,73 6,73 6,73 6,73 6,73 6,73 6,73 6,73	0 3,854 0 1,920 0 0 0 22 0 1,372 0 0 0	1,000 pounds 1,295,297 2 165,530 142,317 20,840 10,144 37,899 0	1,000 pounds 374, 924 0 4, 623 1, 141 0 0 1, 142 0 0 0 0 0 0 0 0 0 0 0 0
Total	1, 800, 482	375, 343	2,051,170	291, 930	1, 786, 175	214, 892	1, 674, 693	386, 338
PRINCIPAL IMPORTING COUNTRIES United States United Kingdom France Germany Canada Japan Italy Russia Belgium Spain Netherlands Austria Sweden Czechoslovakia delium Hungary Denmark China	0 16, 049 6, 051 0 351 0 2, 719 19 6, 267 1, 283 276 213 4 0	1, 002, 031 124, 052 106, 453 87, 825 59, 580 50, 307 27, 855 16, 271 13, 958 10, 561 7, 289 5, 348 2, 291 1, 341 1, 016	0 2,421 11,551 0 0 24 0 5,037 5,037 5,037 5,037 66 776 185 0 0	1, 124, 003 190, 818 105, 591 99, 330 56, 583 97, 548 22, 613 62, 192 29, 774 15, 834 9, 440 8, 901 18, 736 18, 061 3, 241 3, 241 3, 241	0 0 1, 394 5, 336 0 0 288 0 4, 812 0 4, 448 1, 922 1, 151 1, 285 100 0	928, 857 97, 577 91, 079 106, 181 46, 854 125, 974 34, 273 67, 679 26, 081 10, 833 6, 384 9, 730 22, 483 2, 935 2, 006 8 10, 564	0 0 2, 456 7, 117 0 109 0 8, 935 0 6, 218 789 86	935, 340 164, 181 156, 576 128, 345, 172 43, 483 68, 711 33, 948 17, 412 9, 005 6, 997 9, 356
Total	33, 376	1, 544, 723	26, 688	1, 861, 574	9, 476	1, 614, 316	25, 715	1, 794, 123

¹ Praliminary.
2 Java and Madura only.
3 International Yearbook of Agricultural Statistics.
4 2-year average.
5 Does not include Manchuria after June 30, 1932.

Bureau of Agricultural Economics; official sources except where otherwise noted.
Figures for rubber include "India rubber", so called, caoutchouc, caucho, jebe (Peru), hule (Mexico), borracha, massaranduba, mangabeira, manicoba, sorva, and seringa (Brazil), gamelastiek (Netherlands Indies), caura, ser nambi (Venezuela).

Table 456.—Coffee: International trade, average 1925-29, annual 1931-33

ļ				- Jaiona	,			
Country	Average	1925-29	19	31	19	032	193	331
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORTING COUNTRIES Brazil	187, 523 118, 217 100, 915 96, 466 72, 395 58, 789 38, 946 30, 645 22, 540	1,000 pounds 0 2 5 3,035 0 0 422 0 4,662 45 0	1,000 pounds 2, 361, 317 401, 269 151, 634 123, 550 80, 174 2 120, 439 57, 960 60, 210 50, 739 34, 934 21, 019 20, 722 11, 306 9, 177	1,000 pounds 0 3 5,012 0 0 175 0 118 1,941 16 0 0	1,000 pounds 1,578,758 421,376 250,880 108,517 287,423 58,076 44,197 40,783 17,918 19,186 25,451 14,137 8,877	1,000 pounds 0 2 1,635 0 0 136 0 105 139 6 0	1,000 pounds 2,044,855 3 48,824 75,282 	1,000 pounds 0
Total	2, 951, 283	8, 169	3, 504, 450	7, 265	2, 675, 579	2, 023	2, 406, 656	107
PRINCIPAL IMPORTING COUNTRIES							,,	
United States France Germany Netherlands Italy Sweden Belgium Denmark Argentina Spain United Kingdom Finland Norway 5 Czechoslovakia Union of South Africa Switzerland Canada Algeria Yugoslavia Egypt Cubs Austria British Malaya Poland Chile Greece Hungary Ceylon Bulgaria	219 365 36, 978 4 235 890 4 235 0 0 13 201 59 55 51 11 1 6 9, 010 8	1, 429, 825 360, 039 266, 650 113, 722 99, 761 88, 285 53, 588 648, 120 40, 698 24, 306 27, 926 28, 306 27, 926 28, 306 27, 926 31, 572 29, 168 28, 306 27, 926 31, 971 21, 180 19, 953 19, 382 18, 368 17, 046 15, 819 21, 81	7, 211 66 2, 195 14, 895 14, 895 10, 232 716 0 0 204 42 2 0 11 5 5, 210 6 6 34 2 1 1 1 1 0	1, 741, 536 427, 712 345, 082, 103, 515 96, 638 \$ 116, 616 134, 937 66, 383 50, 555 48, 875 30, 983 40, 315 31, 694 34, 150 32, 917 30, 453 10, 671 16, 627 1, 873 21, 644 12, 169 17, 988 10, 628 14, 459 17, 988 10, 628 14, 459 17, 988 17, 988 18, 458 19, 631 19, 631 19, 631 11, 644 12, 169 17, 988 10, 628 14, 459 17, 280 4, 214 1, 503	4,797 112 1,410 19,005 41 5955 3,901 515 0 0 0 0 5,769 43 0 0 13,424 1 5,285 2 2 12 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1, 501, 126 412, 166 412, 166 287, 337, 102, 882 88, 885 4 85, 165 113, 574 48, 528 47, 313 32, 793 34, 578 33, 709 24, 635 44, 324 31, 162 30, 312 15, 299 11, 720 15, 379 7, 366 9, 407 5, 718 2, 280 1, 342	7, 113 183 641 13, 498 8 5119 69 0 0 0 2 500 51 5, 815 2	1, 586, 254 433, 061 286, 529 121, 188 86, 627 5 90, 378 87, 589 88, 991 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 551 61, 653 2, 640 10, 220 4, 965 3, 060 1, 073
Total	66, 354	2, 998, 452	41,715	2, 533, 246	49, 607	3, 112, 116	28, 201	3, 210, 126
1 Preliminary	·					1	<u> </u>	

Preliminary.
 International Yearbook of Agricultural Statistics.
 Java and Madura only.
 Raw, only.
 Includes a small amount of surrogate.

Bureau of Agricultural Economics; official sources except where otherwise noted. The item "coffee" comprises unhulled and hulled, ground or otherwise prepared, but imitation or "surrogate" coffee and chicory are excluded.

Table 457.—Tea: International trade, average 1925-29, annual 1930-33

			·		Calend	ar year				
Country	A vei 1925		19	30	19	31	19	32	193	3 1
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
PRINCIPAL EXPORT- ING COUNTRIES	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 Dounds	1,000 pounds	1,000 pounds
British India Ceylon Netherlands Indies.	364, 848 228, 445 124, 947	8, 260 1 8, 434	365, 344 243, 021 137, 573	8, 660 2 1 8, 472	351, 283 243, 970 152, 095	7, 597 2 1 6, 965	375, 236 252, 824 154, 256	5, 586 2 1 4, 200	336, 962 216, 061 3 116,647	5, 163 3 2, 186
China Japan Formosa	116, 300 24, 631 20, 431	8, 214 1, 009 66	20, 316	1, 152	25, 410		29, 535	4 1, 493 878 2 35	29, 483	418 745
Total	879, 602	25, 984	875, 231	21, 399	882, 738	20, 312	912, 451	12, 193	788, 146	8, 512
PRINCIPAL IMPORT- ING COUNTRIES					•					
United Kingdom United States Australia 2	0	93, 052	l o	84, 926	Ó	86, 733	l o	94, 727	1 0	96, 582
Russia Canada Netherlands	0 0 29	43, 287 38, 268 26, 144	93	53, 411 50, 886 29, 587	0 0 119	33, 115 31, 214	128	35, 161 40, 418 36, 166	0 0 136	39, 414
Irish Free State Iran I Morocco	742	14, 925 12, 770	131	14, 475 12, 688	10	9, 943 13, 835	0	9, 639 18, 213	0	18, 267
New Zealand Union of South	1		1		1	1	İ	,	l	,
Africa	218 0 259	11, 037 10, 814	97	13, 320 5 12, 199	6 20	11, 672 6 15, 433	6.5	10, 577 6 16, 584	0	10, 341 5 13, 917
indo-Unina	2, 104	10, 491 5, 156 4, 827	1, 206	4, 851 3, 428	1, 294	5, 060 3, 161	1	4, 246 1, 711	1, 466	2,716 1,560
Poland Argentina France	0 81	3, 867 3, 456	38	3, 874 3, 278	40 40	3, 950 3, 534	20	3, 286	26	4, 182 4, 123
Algeria Czechoslovakia Denmark	3	1, 492 1, 276	el c	1, 364		1,807	0	1, 345	0	1, 364
Austria Yugoslavia Hungary	0 5		1 2	1, 150 647 585	1 0		0	456	Ó	384
Total	4, 859	814, 562	2, 608	857, 840	2, 308	822, 754	2, 197	872, 416	2, 239	745, 847

¹ Preliminary.
2 International Yearbook of Agricultural Statistics.
3 Java and Madura only.
4 Does not include Manchuria after June 1932.
5 Year ended Mar. 20 of following year; beginning 1931, figures are for year ended June 21 of following

year.
6 Includes yerba mate and imitation tea.

Bureau of Agricultural Economics; official sources except where otherwise noted. These figures are for tea leaves only; tea dust and sweepings and yerba mate are not included.

FARM BUSINESS AND RELATED STATISTICS

Table 458.—Crop summary: Acreage, yield per acre, and production, 1932-34

	Acrea	ge harve	sted		Yie	ld per a	cre	P	roduction	1
Crop	1932	1933	1934	Unit	1932	1933	1934	1932	1933	1934
Corn, all All wheat Winter All spring Durum Other spring Oats Barley Rye Buck wheat Flaxseed Grain sorghums Cotton, lint Cottonseed Hay, all Hay, tame Hay, wild Sorgo 3 Timothy seed	57, 114 35, 216 21, 898 3, 946 17, 952 41, 420 13, 344 454 1, 975 7, 864 35, 939 67, 727 53, 152 14, 275 2, 632 3, 374	47, 910 28, 485 19, 425 2, 310 17, 115 36, 701 10, 009 2, 349 462 1, 328 8, 149 29, 978 66, 241 53, 965 12, 276 3, 354 281	32, 945 9, 290 8, 300 8, 300 30, 395 7, 144 1, 937 480 974 7, 569 27, 515 60, 394 51, 495 8, 899 3, 557 126	do	13. 1 13. 6 12. 2 10. 3 12. 6 30. 1 22. 6 30. 1 12. 2 14. 8 5. 9 47. 3 13. 5 2 173. 3 1. 32 1. 3	1. 13 1. 23 . 69 1. 43 2. 97	11. 8 12. 3 9. 8 7. 2 10. 2 17. 4 16. 6 8. 3 18. 9 5. 4 49. 0 2 169. 2 1. 01 53 2. 07	745, 788 478, 291 207, 497 40, 600 226, 897 1, 246, 548 302, 042 40, 639 6, 727 11, 671 41, 250 106, 306 13, 002 5, 783 82, 488 770, 351 12, 137 3, 4456	13, 047 5, 804 74, 607 66, 130 8, 477 4, 795	496, 489 405, 034 91, 435 7, 086 84, 349 528, 815 118, 929 16, 040 9, 062 5, 253 38, 296 34, 525 9, 731 4, 324 56, 800 51, 941 4, 749 3, 252 262
Clover seed (red and alsike) Swertclover seed Lespedeza seed Lespedeza seed Beans, dry, edible Soybeans Cowpeas Cowpeas Velvetbeans Velvetbeans Tobacco Apples, total Apples, commercial Peaches, total Pears, total Crapes, total Crapes, total Crapes, total Pears, total Grapes, total Fresh (12 States) Plums and prunes, fresh (5 States)	209 188 301 1, 408 828 691 1, 607 1, 401 3, 379 926 1, 411	213 320 451 1, 692 847 640 1, 345 1, 442 3, 194 759 1, 757	189 247 392 1, 378 1, 152 654 1, 571 1, 595 3, 303 762 1, 335	do Bag 5 Bushel do Dound Ton Bushel do Bushel do Dound Bushel do Dound Bushel do Dound Bushel do Dound Bushel do Dound Bushel do Dound Dou	3. 32 8. 76 1. 98 2 742 15. 8 8. 9 646 2 836 105. 9 84. 7 727	3. 33 8. 26 2. 27 2 729 13. 8 9. 1 873 2 845 100. 3 85. 8 784	3. 32 7. 74 2. 09 2 737 15. 4 8. 1 677 2 826 116. 6 88. 5 821	693 1, 644 595 10, 440 13, 121 1, 037, 840 1, 037, 840 357, 87; 78, 431 1, 026, 091 7 140, 775 85, 575 7 42, 443 1 7 22, 050 7 2, 204 7 127 7 156	710 2, 640 1, 026 12, 338 11, 670	10, 159 17, 762 5, 296 1, 063, 035 385, 287 67, 400 1, 095, 662 119, 855 75, 160 7 45, 404 7 23, 474 1, 775
Prunes dried (3		1	1	ofu		1	1	7 105		202
Oranges (7 States) Grapefruit (4 States) Lemons (California) Cranberries Pecans Sorgo sirup Sugarcane (Louisi-	250 2250	7 27 0 240 3 214	225 246	Boxdododo Barrel Pound Gallon	21. 4 60. 8 15. 1	25. 7 62. 3 14. 8	16. 2 60. 5 15. 0	51, 368 15, 149 6, 704 58, 53, 560 15, 209 3, 36	14, 24; 7, 29; 70 61, 21; 14, 96;	18, 248 7, 500 4 443 0 40, 325 1 13, 788
Cane sirup	110 76 1012,09 1012,09	0 127 4 983 1 1012,076 1 1012,076	131 766 1012,158 1012,158	Gallon Found Gallon	154. 4 11. 9 11 1. 7	155. 3 11. 2 3 11 1. 5 3 11 1. 5	160. 4 9. 8 11 1. 6 6 11 1. 6	16, 98 9, 07 8 1, 62 8 2, 41	0 11,03 3 1,28	7,481 1,271

I All purposes.

<sup>All purposes.
Pounds.
For hay and forage, but not included in tame hay.
Bushels of 25 pounds.
Bags of 100 pounds.
Covers only mature crop gathered for the beans, peas, or peanuts.
Includes some quantities not harvested.
Production is the total for fresh fruit, juice, and raisins.
Includes 977,000 boxes of California oranges for charity.
Trees tapped.
Total equivalent sugar per tree.</sup>

Table 458.—Crop summary: Acreage, yield per acre, and production, 1932-34 Continued

G	Acrea	ge harv	ested		Yie	eld per a	cre	1	Production	n
Crop	1932	1933	1934	Unit	1932	1933	1934	1932	1933	1934
Broomcorn Hops Commercial truck crops:	1,000 acres 304 22	1,000 acres 280 30	36	Pound	1,094	1,319	² 199 1,127	Thou- sands 37 24, 058	Thou- sands 30 39,965	Thou- sands 30 40, 345
Asparagus 12 Beans, lima 13 Beans, snap 12 Beats, snap 12 Cabbage 15 Cantaloups Carrots. Cauliflower Celery Corn, sweet (canning) Cucumbers 12 Eggplant Lettuce Onions. Peas, green 13 Peppers. Spinach 12 Tomatoes 13	13. 7 140. 3 135. 8 29. 8 31. 8 35. 6 165. 1 78. 2 3. 6 91. 8 299. 2 17. 3 54. 4 438. 1	28.3 163.8 14.4 125.4 109.0 32.6 30.2 31.2 199.7 98.5 4.0 141.1 79.4 327.5 174.1 434.6	36. 7 192. 0 17. 1 96. 2 35. 9 28. 6 32. 2 286. 7 121. 8 3. 7 154. 3 82. 7 350. 8 15. 2 69. 9	Cratedo Ton Bushel Crate Cwt Bushel	7, 04 125 362 243 278 2, 34 222 109 169	5.80 117 326 232 276 1.97 228 123 152	6. 93 123 362 232 268 1. 73	7 987. 1 7 17, 021 7 10, 815 7 7, 730 7 9, 894 387. 2 809 7 17, 820 7 15, 530 3, 894	7 12, 759 10, 635 7 7, 000 7 8, 624 394. 3 910 7 17, 374 12, 067 4, 227	13,005 6,621 8,617 495.6 719,055 713,089
Watermelons Miscellaneous 13	233. 2 39, 5		196.6	Number.	260	269	249	⁷ 60, 623	7 50, 099	7 48, 961
Total above truck crops: For market (21 crops). For manufac- ture (11 crops)	1, 478. 6 787. 7	l .			1					
Potatoes, early Strawberries	275. 4 188. 3	252. 6 196. 2		Bushel Crate	121 70. 5	122 67. 6	139 67. 1	33, 320 7 13, 280	30, 791 7 13, 258	42, 796 7 13, 264
Total of crops listed above 14_	359, 528	329, 128	288, 596							

² Pounds.

Bureau of Agricultural Economics; estimates of the Crop Reporting Board.

Includes some quantities not harvested.
 Includes production used for canning or manufacture.
 Includes following crops in certain States: Artichokes, sweet corn, and kale for market, and pimientos

for manufacture.

14 Includes soybeans, cowpeas, and peanuts grazed or hogged off in the Southern States.

Table 459.—Index numbers of the volume of net agricultural production, 1 1919-34

Year	Grains	Fruits and vege- tables	Truck crops	Cotton and cotton- seed	All crops	Meat animals	Dairy prod- ucts	Poultry prod- ucts	All live- stock and livestock products	Total
1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1927 1928 1929 1930 1931 1932 1933 1933	100 102 98 96 103 108 93 85	84 100 75 108 103 96 90 109 94 117 94 106 115 101	58 70 61 81 79 91 96 93 105 102 113 113 105 114	76 88 53 65 67 91 107 120 87 99 92 112 86 86 86	89 101 77 89 90 96 95 106 97 95 104 92 69	98 91 92 102 107 102 97 98 101 101 101 101 106 108	78 77 83 87 91 94 96 99 102 103 106 107 110 110	74 74 85 88 98 91 99 105 106 109 105 105 106	86 83 87 94 99 97 96 98 102 103 104 105 109 107	87 91 83 92 95 97 97 102 99 104 101 107 100 97

¹ These index numbers are based on estimates of production of farm products for sale or for consumption in the farm home. Products fed to livestock, used for seed or in other forms of production are not included. in the farm home. Products fed to livestock, used for seed or in other forms of production are not included. Only the amounts of corn and oats sold for grain and only that part of the hay crop sold from farms are included. Production of meat animals is represented by total slaughter, including slaughter for farm use, The index number of dairy products production represents total milk produced for all purposes except whole milk fed to calves. Calendar-year production of livestock and livestock products is compared with crop production of the same year. Each group index, as well as the total, is obtained by multiplying the yearly quantities by a 1924-29 average farm price received by producers for each of the commodities, and the sum of these yearly values at average prices, divided by the corresponding average sum for the period 1924-29 taken as 100. The commodities included in constructing the index contributed about 93 percent of the gross income from agricultural production during the years 1924-29. The commodities included in each group are; Grains—wheat corn casts believe the whet flowsed flows are represented to the gross income from agricultural production during the years 1924-29. The commodities included in each group are; Grains—wheat corn casts believe the burkeybet flowsed for group are proposed. gross income from agricultural production during the years 1924-29. The commodities included in each group are: Grains—wheat, corn, cast, barley, rye, buckwheat, flaxseed, rice, grain sorghum; fruits and vegetables—grapes, apples, apricots, peaches, pears, cranberries, figs, grapefruit, oranges, lemons, olives, potatoes, sweetpotatoes, dry edible beans; truck crops—asparagus, snap beans, beets, cabbage, cantaloups, carrots, cauliflower, celery, cucumbers, eggplant, lettuce, onions, peas, peppers, spinach, strawberries, tomatoes, watermelons; cotton and cottonseed; all crops include tobacco and hay in addition to all previous items; meat animals—cattle, calves, sheep, lambs, hogs; dairy products—milk total production less milk fed to calves; poultry products—chickens and eggs; all livestock and livestock products include wool in addition to the livestock and livestock products mentioned; the total index is the combined index of all crops and all livestock and livestock products.

2 Preliminary.

Bureau of Agricultural Economics.

Table 460.—Total harvested acreage and farm value of principal crops, by States $1932{-}34^{\ 1}$

State and division	Ac	reage harvest	ed	F	arm value	2
5,000 020 21,15102	1932	1933	1934	1932	1933	1934
Maine	Acres 1, 325, 000 371, 000 1, 077, 000 406, 300 48, 000 346, 300 6, 450, 400 647, 000 6, 128, 100	Acres 1, 314, 000 370, 000 1, 072, 000 404, 900 50, 000 344, 600 6, 460, 400 6, 53, 000 6, 094, 700 16, 763, 600	Acres 1, 309, 000 371, 000 1, 074, 000 409, 000 51, 000 341, 300 6, 546, 300 5, 989, 200	1,000 dollars 22,235 5,743 16,611 15,993 1,450 13,373 91,330 25,883 81,681	1,000 dollars 38, 932 7, 442 19, 018 18, 291 1, 793 14, 493 119, 267 32, 828 115, 063	1,000 dollars 27, 925 7, 962 24, 442 18, 565 1, 787 15, 251 138, 932 33, 034 138, 903
Ohio Indiana Illinois Michigan Wisconsin Minnesota Lowa Missouri North Dakota South Dakota Nebraska Kansas	9, 428, 1001 10, 339, 700 18, 800, 700 7, 299, 000 9, 538, 500 18, 972, 800 22, 397, 200 13, 839, 300 17, 708, 800 21, 794, 000 24, 222, 900	9, 338, 000 9, 769, 500 17, 429, 300 7, 223, 000 18, 806, 600 22, 315, 400 12, 946, 000 19, 108, 500 9, 189, 400 21, 469, 000 20, 293, 900	8, 887, 000 9, 403, 800 15, 688, 300 7, 165, 000 9, 090, 400 16, 437, 700 18, 021, 400 11, 003, 100 9, 286, 900 5, 472, 700 15, 254, 000 17, 498, 400	73, 269 64, 705 117, 241 75, 130 96, 187 109, 319 123, 200 82, 965 61, 602 50, 500 87, 501 82, 468	112, 356 93, 066 158, 858 102, 523 122, 014 145, 515 223, 273 122, 141 81, 560 30, 5.5 133, 063 106, 248	164, 605 150, 231 217, 624 127, 873 176, 913 186, 593 255, 824 104, 573 49, 498 28, 233 85, 223 118, 139
North Central	196, 143, 300	177, 436, 500	143, 208, 700	1, 024, 087	1, 431, 192	1, 665, 339
Delaware Maryland Virginia West Virginia North Carolina South Carolina Georgia Florida South Atlantic	1, 203, 300	381, 000 1, 646, 000 3, 746, 000 1, 431, 700 5, 923, 000 3, 958, 000 7, 539, 000 1, 162, 200 25, 786, 900	379, 000 1, 610, 300 3, 648, 000 1, 418, 000 5, 857, 000 4, 011, 000 7, 789, 000 1, 147, 700 25, 860, 000	5, 473 25, 005 46, 553 17, 892 104, 362 51, 398 67, 039 57, 914	7, 502 33, 901 82, 501 25, 601 194, 390 86, 309 128, 588 66, 659 625, 451	11, 019 43, 676 103, 521 28, 766 266, 449 109, 780 161, 445 82, 941
	26, 892, 500					
Kentucky. Tennessee	5, 062, 100 6, 117, 000 7, 367, 000 6, 844, 000 6, 601, 000 3, 974, 400 15, 025, 000 30, 663, 000	5, 066, 200 5, 808, 000 6, 324, 000 5, 804, 000 5, 857, 000 3, 487, 300 12, 961, 000 26, 828, 000 72, 135, 500	4, 783, 000 5, 476, 000 6, 686, 000 5, 999, 000 5, 580, 000 3, 594, 300 12, 466, 000 26, 919, 000	67, 485 63, 709 62, 051 66, 630 68, 328 54, 711 75, 993 233, 126	90, 950 100, 132 99, 454 100, 325 95, 851 68, 821 121, 326 352, 339 1, 029, 198	120, 356 123, 527 142, 975 141, 395 106, 228 88, 294 103, 228 334, 459
	81, 653, 500					
Montana Idaho Wyoming Colorado New Mexico Arizona	7, 575, 000 2, 924, 000 2, 036, 000 5, 749, 500 1, 573, 200	6, 716, 000 2, 776, 000 2, 030, 000 6, 042, 500 1, 454, 600	5, 185, 100 2, 584, 000 1, 355, 000 3, 818, 000 921, 300 490, 000	41, 033 33, 884 13, 754 38, 252 9, 874 12, 608	42, 762 49, 561 18, 012 56, 567 17, 239	55, 883 55, 980 16, 854 48, 927 17, 971 23, 978
Utah	456, 000 1, 186, 000	501, 000 1, 175, 000	934,000	17, 018	17, 471 19, 006	16, 369
Nevada Washington Oregon California	368, 000 3, 427, 700 2, 731, 000 5, 156, 000	352,000 3,361,100 2,684,000 4,855,000	273, 000 3, 170, 000 2, 609, 000 4, 914, 000	3, 242 50, 653 34, 602 239, 670	2, 986 75, 592 51, 699 296, 849	2, 816 84, 896 49, 510 351, 136
Western	33, 182, 400	31, 947, 200	26, 253, 400	494, 590	647,744	724, 308
United States	⁸ 354, 670, 800	⁸ 324, 069, 700	³ 283, 584, 200	2, 860, 645	4, 100, 712	4, 764, 507

¹ Includes corn (all), oats, barley, grain sorghum (all), wheat (all), rye, buckwheat, flaxseed, rice, beans (dry edible), soybeans alone, cowpeas alone, peannts alone, velvetbeans alone, tame hay (all), wild hay, sorgo for forage and hay, timothy seed, red and alsike clover seed, sweetclover seed, lespedeza seed, alfalfa seed, cotton, tobacco, sorgo sirup, sugarcane (Louisiana), sugarcane sirup (except Louisiana), sugar beets, broomcorn, potatoes, sweetpotatoes, asparagus, snap beans, cabbage, cantaloups, cauliflower, celery, sweet corn (for canning), cucumbers, lettuce, onions, peass, spinach, tomatoes, watermelons; farm value also includes cottonseed, apples (all), peaches, pears, grapes, cranberries, oranges, hops, cherries, pecans, grape-fruit, lemons, limes, apricots, plums, prunes (all), figs, olives, almonds, walnuts, maple products.

3 Based on price received by producers Dec. 1, except for some early marketed crops for which price for marketing season is used, and differs from prices used in tables 461 and 462.

5 Differs from total in table 458 in that cranberries, hops, artichokes, beets, carrots, eggplant, kale, lima beans, peppers, pimientos, sweet corn (for market), and strawberries are excluded, and for annual legumes only acreage grown alone is included.

Table 461.—Gross income from farm production, by States, 1931-33

1		O		Livesto	ck and liv	estock	Crops an	ad livesto	ek prod-
State		Crops			products			cts combi	
	1931	1932	1933 1	1931	1932	1933 1	1931	1932	1933 1
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1	dollars	dollars	dollars	dollars	dollars	dollars	dollars	dollars	dollars
Maine	22, 759	18, 572	35, 712	25, 664	22, 068	20, 331	48, 423	40, 640	56, 043
New Hampsnire	5, 917	4,654	5, 611	15, 524	12,950	12, 190	21, 441	17, 604	17, 801
Vermont	8, 174	7, 520	7, 390	30, 992	25, 423	24, 927	39, 166	32, 943	32, 317
Massachusetts	26, 793	19, 938	25, 787	38, 261	31, 300 4, 879	28, 825 4, 660	65, 054	51, 238 6, 739	54, 612
Rhode Island	2,839 17,886	1,860 13,222	2, 709 15, 737	5,866 29,463	25, 068	24, 443	8, 705 47, 349	38, 290	7,369
Connecticut New York	97, 178	70, 772	93, 409	197, 512	151, 346	153, 631	294, 690	222, 118	40, 180
New Jersey		34 270	38, 677	41, 646	34 367	34 001	78, 925	68, 637	247, 040 72, 678
Pennsylvania	75, 856	34, 270 55, 789	72, 005	174, 966	136, 199	34, 001 135, 278	250, 822	191, 988	207, 283
Ohio	86, 722	56, 475	73, 257	185, 129	135, 162	143, 742	271, 851	191, 637	216, 999
Indiana		43, 224	45, 781	156, 712	118, 026	127, 084	214, 679	161, 250	172, 865
Illinois	109, 386	96, 788	86, 803	241, 099	174, 297	188, 052	350, 485	271, 085	274, 855
Michigan	62, 674	54, 272	71, 192	116,096	88, 479	88, 689	178, 770	142, 751	159, 881
Wisconsin	35, 227	25, 052	34, 013	221, 806	159,042	165, 910	257, 033	142, 751 184, 094	199, 923
Minnesota	48, 490	45, 365	55, 644	219, 277	150, 166	153, 092	267, 767	195, 531	208, 736
Iowa	51, 152	59, 984	58, 066	383, 285	251, 442	248, 394	434, 437	311, 426	306, 460
Missouri	56, 335	47, 175	57, 703	188, 998	139, 186	145, 786	245, 333	186, 361	203, 489
North Dakota	20,003	40, 183	43, 373	53, 166	38, 115 1	41, 123	73, 169	78, 298	84, 496
South Dakota	8, 255	23, 575	5, 398	125, 735	52, 631	67, 980	133, 990	76, 206	73, 378
Nebraska		42, 889	55, 432	204, 179	124, 016	126, 084	248, 176	166, 905	181, 516
Kansas	95, 010	51, 257	53, 108	163, 488	117, 053	118, 256 5, 799	258, 498	168, 310	171, 364
Delaware		5, 249	5, 906	9,017	6, 734 29, 572	28, 284	15, 922	11, 983	11, 705
Maryland		21, 502 46, 756	25, 459 67, 094	36, 535 66, 854	54, 463	49, 753	64, 603 130, 478	51,074	53, 743
Virginia West Virginia	21, 746	15, 083	18, 275	37, 810	29, 704	29, 051	59, 556	101, 219 44, 787	116, 847 47, 326
North Carolina	118, 381	104, 338	182, 240	59,616	45, 796	44, 574	177, 997	150, 134	226, 814
South Carolina	61, 213	50, 955	73, 546	28, 341	22, 379	22, 088	89, 554	73, 334	95, 634
Georgia		66, 702	107, 129	49, 398	38, 863	36, 240	138, 431	105, 565	143, 369
Florida	84, 419	65, 937	61, 448	20, 635	16, 592	16, 410	105, 054	82, 529	77, 858
Kentucky	67,612	58, 495	67, 277	72, 334	55, 087	55, 214	139, 946	113, 582	122, 49
Kentucky Tennessee	70, 765	58, 642	78, 710	61, 404	46, 936	46, 984	132, 169	105, 578	125, 69
Alabama	80, 686	67, 215	87, 466	44, 848	34,081	34, 386	125, 534	101, 296	121, 85
Mississippi	89, 953	72, 355	91,716	38, 848	29, 923	28, 231	128, 801	102, 278	119, 94
Arkansas		71, 246	84, 474	36, 906	29,608	28, 926	124, 586	100, 854	113, 400
Louisiana	70, 580	57, 256	64, 797	30, 434	23, 674	22, 284	101, 014	80, 930	87, 08
Oklahoma		64, 551	100, 732	78,006	57, 809	62, 207	153, 996	122, 360	162, 93
Texas		227, 338 25, 502	292, 930 22, 059	187, 789 47, 474	132, 816	148, 029 33, 738	449, 622	360, 154	440, 959
Montana Idaho		23, 123	35, 290	35, 452	29, 598 24, 230	26, 537	62, 100 60, 816	55, 100 47, 353	55, 79
Wyoming		5, 741	8, 222	25, 641	18, 534	20, 668	33, 285	24, 275	61, 82 28, 89
Colorado		23, 371	39, 987	59, 040	41, 759	35, 054	96, 292	65, 130	75, 04
New Mexico	12,309	7,480	11,725	21, 292	17, 362	18, 161	33, 601	24, 842	29, 886
Arizona	13,872	11,083	15, 114	17, 540	13, 726	14, 195	31, 412	24, 809	29, 30
Utah	10,811	10, 447	12, 561	27, 277	18, 129	18, 669	38, 088	28, 576	31, 23
Nevada	1.016	810	866	9, 279	5, 597	5, 965	10, 295	6, 407	6, 83
Washington	60, 727	49, 411	68, 657	58, 137	44, 237	44, 587	118, 864	93, 648	113, 24
Washington Oregon	33, 610	29, 577	38, 963	47, 953	35, 383	36,076	81, 563	64, 960	75, 03
California	277, 753	233, 321	271, 958	183, 715	139, 813	129, 771	461, 468	373, 134	401, 72
United States 2	2,748,528	2,290,778	2,876,880	4,210,439	3,033,620	3, 094,359	6,958,967	5,324,398	3 5,971,239

Bureau of Agricultural Economics.

¹ Preliminary.
2 Totals include sugar beets for "Other States", 1931, \$5,157,000; 1932, \$4,456,000; 1933, \$5,472,000.
3 Includes \$30,643,000, value of hogs slaughtered under Agricultural Adjustment Administration reduction plan, Aug. 23 to Oct. 7, 1933, but does not include \$271,024,000 benefit payments on wheat, cotton, and tobacco, under the Agricultural Adjustment Administration.

Table 462.—Gross income from farm production, United States, by commodities

	G	ross incon	ne		G	ross incor	ne
Product	1931	1932	1933 1	Product	1931	1932	1933 1
	1,000	1,000	1,000	crors-continued	1,000	1,000	1,000
CROPS	dollars	dollars	dollars	1	dollars	dollars	dollars
Corn	138, 062	170, 456	138, 580	Pecans	6, 157	2,998	4, 749
Wheat	261, 607	202, 105	280, 044	Sugar beets, for			
Oats	42, 661	34, 809	32,907	sugar	46, 948	47, 705	58, 651
Barley Rye	12, 332	16, 895	15, 089	Sugarcane and sirup.	12, 538	13, 657	15, 078
Rve	3, 883	4, 126	4,342	Sorgo sirup	5, 161	3, 898	4,862
Ruckwheat	2, 8481	2,016	2,881	Maple sugar and			
Flaxseed	12, 200	9, 444	9,384	_sirup	4, 223	4, 049	2, 847
Rice	21, 230	16, 155	26, 390	Forest products	120, 386	105, 427	114, 916
Grain sorghums	4, 101	2, 581	5,032	Farm gardens	219, 412	214, 650	219, 085
Emmer and spelt	88	65	45	Nursery products	44, 891	30, 854	36, 283
Pop corn	883	630	393	Greenhouse prod- ucts			
Cotton lint	483, 666	424, 032	633, 266	ucts	67, 219	43,002	51, 978
Cottonseed	44, 807	40, 316	50, 920				
Tobacco	129, 689	107, 115	179, 088	Total	2, 748, 528	2, 290, 778	² 2, 876, 880
Hay Sorgo forage Hemp Cloverseed (red and	74, 978	53, 116	60, 297				
Sorgo forage	1,719	1,348	2, 281	LIVESTOCK AND LIVE-			
Hemp	12	5	6	STOCK PRODUCTS	1	ì	
Cloverseed (red and						400 004	400 484
QIGILE)	0.4041	7, 271	6, 690	Cattle and calves	680, 572	498, 634	
Sweetclover seed	1,543	707	991	Hogs	929, 958	548, 374	3 618, 604
Lespedeza seed	2, 939	2, 114	3, 700	Sheep and lambs Horses	107, 984	76, 044	78, 310
Alfalfa seed	5, 703	2,671	4, 793	Horses	8, 322	7, 785	7,907
Timothy seed	2,700	1, 219	1,451	Mules	3, 482	3, 648	6,306
Dry edible beans	24, 253	18, 159	29, 658	Cnickens	325, 795	240, 779	206, 920
Soybeans	5, 077	4,904	4, 347	Chickens Eggs (chicken) Milk Wool	478, 379	358, 982	344, 803
CowpeasPeanuts	3,648	3, 124	3,306	Milk	1, 614, 394	1, 200, 424	1, 262, 554
Peanuts	19,055	13, 471	20,758	W001	50, 414	30, 014	75, 033
Broomcorn	2,041	1,381	3, 397	Mohair	3, 176	1, 485	4,751
Potatoes	145, 583	114, 240	222, 932	Honey	7, 963	7, 201	
Sweetpotatoes Truck crops	40,069	35, 087	38, 520	Total	4 010 490	2 022 800	3 2 004 250
Truck crops	292, 791	222, 547	225, 441	1.ota1	4, 210, 439	3, 033, 020	* 5, 094, 509
Hops	3,642	4, 199	11,059	0	0.000.00	E 204 200	2 35 071 990
Apples Peaches	125, 876	86,638	103, 851	Grand total	0, 900, 907	0, 324, 398	" "0, 8/1, 208
Peaches	40, 788	18,897	32, 432	United States: After			
Pears	. 13,070	7,627	10, 252			į.	{
Cherries	7,964	5, 157	6, 575	deducting for in-	1	1	İ
Plums and apricots.	4, 499	2,790	4, 369	terstate sales of crops, principally		1	1
Grapes	36, 085	26,982	33, 841	seeds, and adding	1	1	}
Other fruits and		110 950	118, 380	for fother poul		i	1
nuts	134, 988	112,356 32,383	27,748	for "other poul- try" and honey	1	i	1
Strawberries	47, 280 16, 171	32, 383	9,243	not estimated by	1	1	Ì
				tt not estimated DV	1	1	1
Small fruits Cranberries	3, 992	4,029	3,752	States	R ORR 40	5 230 Q43	2 5, 985, 341

Preliminary.
 Does not include \$271,024,000 benefit payments on wheat, cotton, and tobacco, under the Agricultural Adjustment Administration.
 Includes \$30,643,000, value of hogs slaughtered under Agricultural Adjustment Administration reduction plan, Aug. 23 to Oct. 7, 1933.

Bureau of Agricultural Economics. Estimated quantities produced, sold, and consumed in farm households times weighted annual prices. Cash income plus value of commodities consumed in farm households equals gross incomes. For feed and seed crops, horses, and mules, value includes sales by farmers in some States eventually bought by farmers in other States. These interfarm sales tend to overestimate the total income from farm production for the country as a whole.

Table 463.—Gross income from farm production by groups of commodities, expenditures, income available for operators' capital, labor, and management and current value of capital employed in agriculture, United States, 1924–33

Item	1924	1925	1926	1927	1928	1929 1	1930 1	1931 1	1932 1	1933 1
Crops: Grains Fruits and nuts Vegetables Sugar crops Cotton and cottonseed Tobacco Other crops	Mil- lion dollars 1,755 671 953 104 1,710 259 718	Mil- lion dollars 1, 496 683 1, 193 95 1, 740 251 690	1,432 694 1,093 103	Mil- lion dollars 1, 592 690 1, 062 104 1, 464 257 648	Mil- lion dollars 1, 513 705 967 92 1, 470 278 650	1, 297 707 1, 130 83 1, 389 286	Mil- lion dollars 806 567 934 751 212 454	488 457	Mil- lion dollars 450 325 609 69 464 107 264	Mil- lion dollars 506 376 747 81 684 179 301
Total crops	6, 170	6, 148	5, 468	5, 817	5, 675	5, 434	3, 818	2,746	2, 288	2,874
Livestock and livestock prod- ucts: Cattle, hogs, and sheep—— Poultry and eggs———————————————————————————————————	2,380 989 1,678 87 33	2, 822 1, 114 1, 759 97 28	1,167 1,805 88	1,108 1,911 86	1, 202 1, 994 111	1, 241 2, 323 99	2, 448 1, 059 2, 031 68 30	816 1,614 50	1,123 609 1,260 30 21	1, 186 560 1, 263 75 27
Total livestock	5, 167	5, 820	6, 012	5, 799	6, 066	6, 507	5, 636	4, 222	3, 043	3, 111
Total crops and live- stock	11, 337	11, 968	11, 480	11,616	11, 741	11, 941	9, 454	6, 968	5, 331	5, 985
Rental and benefit pay- ments										271
Grand total										6, 256
Expenditures: Current expenditures for production 2 Depreciation of buildings and equipment 3 Wages, interest, rent, and taxes 4	1, 596 850 3, 092	896	889	894	894	912	892	843	805	762
Total deductions	5, 538	5, 834	5, 960	5, 979	6, 153	6, 286	5, 606	4, 592	3,867	3, 629
Income available for operators' labor, capital, and management. Amount available for capital and management	5, 799	1	1	'	1	1	1	l '	, '	
Return to capital and man- agement as percentage of operators' net capital	Per- cent 4. I	Per- cent 5. (Per- cent 2.9	Per- cent 3.5	Per- cent 3.3	Per- cent 3.3	Per- cent -0.7	Per- cent -2.8	Per- cent -4.2	Per- cent 1.9

¹ Estimates since 1929 have been adjusted to the revised estimates of production which were made after the 1930 census data became available. Estimates of income from 1924–28 have not yet been adjusted to revised production estimates. The 1929 estimate of income from crops, comparable with the estimates of 1924–28, was \$5,609,000,000 and 1929 estimate of livestock was \$6,302,000,000; total gross income on old base

of 1924—22, was \$5,609,000,000 and 1929 estimate of livestock was \$8,302,000,000; total gross income on old base for 1929 was \$1,1950,000,000 compared with \$11,941,000,000 when revised.

All of the current operating costs except 7.5 percent of fertilizer costs, 9.5 percent of feed, 10 percent of binder twine, and 15 percent of ginning costs which are estimated as paid by nonfarmer landlords.

3 Depreciation of farm buildings and farm equipment is based upon the value of buildings and farm equipment according to the 1919 and 1929 census, the amount spent for replacements on buildings and machinery and price changes for farm machinery and building materials. While the rate of depreciation fluctuates elightly from year to year, during the last 14 years it has averaged about 5 percent of the value of farm buildings and 21 percent of the value of machinery, entomobiles, and trucks.

4 Cash wages to hired labor plus an allowance of 25 percent for board and an additional 12½ percent of the cash wage to represent perquisites furnished hired labor and domestic hired labor contributing to production. Includes only that portion of interest payable by farm operators; figured at 75 percent of all interest payable on farm mortgage debt on real sestate used in production and interest on all bank loans, other than real estate loans. It is assumed that 70 percent of all taxes on farm property used in production are paid by farm operators and that 72 percent of all rent paid is paid to nonfarmer landlords.

Tarie 464.—Current value of agricultural capital, gross income from jarm production. and selected expenditures. United States, 1909-33

					Se	lected ex	penditu	res		
Year	Current value of agri- cultural capital ¹	Gross income from farm produc- tion ²	Wages (includ- ing board) ³	Feed 4	Ferti- lizer ⁵	Farm imple- ments (includ- ing autos and trucks)	trucks, and trac-	Gin- ning ⁸	Taxes 9	Interest on mort- gages ¹⁰
1909	47, 965 50, 533 55, 941 61, 576 67, 055 66, 630 71, 146 62, 022 60, 356 62, 022 60, 356 57, 189 57, 245 56, 561 57, 604 57, 604 57, 812	Million dollars 6, 238 6, 6432 6, 754 6, 975 4 6, 975 4 12, 832 15, 101 11, 941 11, 941 11, 941 11, 945 6, 968 5, 331 6, 256	Million dollars 652 674 673 696 701 696 701 1, 162 1, 163 1, 102 1, 107 1, 118 1, 161 1, 173 4 475 426	Million dollars 300 300 322 372 336 451 471 1,023 1,025 1,028 888 889 750 885 462 409 355	Million dollars 115 137 152 153 173 152 158 168 168 217 227 328 350 199 213 215 248 242 217 275 276 270 190 113 118	Million dollars 222 239 256 270 284 315 399 669 669 661 671 681 891 991 691 691 691 691 691 691 691 691 6	Million dollars 2 4 8 15 24 4 44 67 116 330 410 324 451 486 488 487 497 388	Million dollars 33 39 52 445 456 43 550 54 654 657 791 477 73 100 1117 73 88 89 775 562	Million dollars 200 204 2112 2128 222 243 260 292 311 393 3483 510 509 516 517 526 545 556 557 566 559 450 385 385	Million dollars 199 210 2212 232 249 249 249 252 269 299 299 345 401 479 554 558 564 567 568 568 568 563 554 564 565 568

¹ As of Jan. 1. Includes land, buildings, machinery, and livestock. Estimates are census values for census years. The value of land and buildings for intercensal years is based on the index of land values per acre and a straight-line interpolation of total acreage in farms. Livestock values are annual estimates of the U.S. Department of Agriculture. Value of farm machinery is based on estimated purchases of farm machinery and changes in the prices paid by farmers for farm machinery.

² For years 1924-33, see table 463. The estimates for 1909-23 are based on items which represent about

95 percent of the gross income in 1924-33.

3 Estimates from 1909-24 based on interpolations between census estimates and the index of farm wage rates; 1924-33 upon farm-wage rate, changes in the number of hired laborers per farm, and the number of

⁴ From 1909 to 1919 interpolation between census years based on an index of prices paid by farmers for feed and an index of production of feed crops. From 1919 to 1933 estimates are based on prices of feed crops, production of byproducts feeds and sales of feed grains and hay which are not used in industry or exported.

⁵ Interpolated between census estimates based on estimated total fertilizer consumption and the U.S.

Department of Agriculture index of fertilizer prices paid by farmers.

6 Value of farm implements interpolated between the 1909, 1914, and 1919 census value of implements produced, after adjustment to represent retail values. Interpolations for other years are based on factory values of farm implements sold in the United States and raised to retail values. Farmers' expenditures for automobiles and trucks are estimated from registrations in principal agricultural States and prices paid

by farmers. 7 Includes the estimated cost of operating trucks, tractors, and one-half of the cost of operating automobiles. Expenditures per vehicle are based upon changes in the prices of gasoline, karosene, oil and tires, licenses, and estimated annual mileage. Cost of operation is estimated cost per vehicle times estimated number of vehicles on farms.

3 Annual cotton production multiplied by ginning costs per bale.
9 Revised estimates of taxes are based on a study of real-estate taxes by States. In adjusting for total taxes it is assumed that the real estate tax is 85 percent and personal property tax is 15 percent of the total.

10 Interpolations between total farm mortgages for 1910, 1920, 1925, 1928, 1930, using smoothed estimates for 1911-19 derived from value of current agricultural capital, and smooth curve, 1920-30.

11 Preliminary.

Table 463.—Gross income from farm production by groups of commodities, expenditures, income available for operators' capital, labor, and management and current value of capital employed in agriculture, United States, 1924–33

Item	1924	1925	1926	1927	1928	1929 1	1930 1	1931 1	1932 1	1933 1
Crops: Grains	Mil- lion dollars 1, 755 671 953 104 1, 710 259 718	Mil- lion dollars 1, 496 683 1, 193 95 1, 740 251 690	Mil- lion dollars 1, 432 694 1, 093 103 1, 251 237 658	Mil- lion dollars 1, 592 690 1, 062 104 1, 464 257 648	Mil- lion dollars 1, 513 705 967 92 1, 470 278 650	Mil- lion dollars 1, 297 707 1, 130 83 1, 389 286 542	806 567 934 94 751 212	488 457 726 69 528 130	464 107	506 376 747 81 684 179
Total crops	6, 170	6, 148	5, 468	5, 817	5, 675	5, 434	3, 818	2,746	2, 288	2,874
Livestock and livestock prod- ucts: Cattle, hogs, and sheep Poultry and eggs. Dairy products. Wool. Other	2, 380 989 1, 678 87 33	2, 822 1, 114 1, 759 97 28	2, 922 1, 167 1, 805 88 30	2, 664 1, 108 1, 911 86 30	1, 202 1, 994 111	1, 241 2, 323 99	1,059 2,031 68	816 1,614 50	1,260 30	560 1,263 75
Total livestock	5, 167	5, 820	6, 012	5, 799	6, 066	6, 507	5, 636	4, 222	3, 043	3, 111
Total crops and live- stock	11, 337	11, 968	11, 480	11, 616	11, 741	11, 941	9, 454	6, 968	5, 331	5, 985
Rental and benefit pay- ments										271
Grand total										6, 256
Expenditures: Current expenditures for production 3	1, 596 850 3, 092	896	889	894	894	912	892	843	805	762
Total deductions	5, 538	5, 834	5, 960	5, 979	6, 153	6, 286	5, 606	4, 592	3, 867	3, 629
Income available for operators' labor, capital, and management. Amount available for capital and management	5, 799	[]		'	'	1	'	1	1	
Return to capital and man- agement as percentage of operators' net capital	Per- cent 4.1	Per- cent 5. (Per- cent 2.9	Per- cent 3.5	Per- cent 3.3	Per- cent 3.3	Per- cent -0.7	Per- cent -2.8	Per- cent -4.2	Per- cent 1.9

¹ Estimates since 1929 have been adjusted to the revised estimates of production which were made after the 1930 census data became available. Estimates of income from 1924-28 have not yet been adjusted to revised production estimates. The 1929 estimate of income from crops, comparable with the estimates of 1924-28, was \$5,609,000,000 and 1929 estimate of 1924-28, was \$5,302,000,000; total gross income on old base

of 1924—28, was \$5,609,000,000 and 1929 estimate of livestock was \$6,302,000; total gross income on old base for 1929 was \$11,950,000,000 compared with \$11,941,000,000 when revised.

2 All of the current operating costs except 7.5 percent of fertilizer costs, 9.5 percent of feed, 10 percent of binder twine, and 15 percent of ginning costs which are estimated as paid by nonfarmer landlords.

3 Depreciation of farm buildings and farm equipment is based upon the value of buildings and farm equipment according to the 1919 and 1929 census, the amount spent for replacements on buildings and machinery and price changes for farm machinery and building materials. While the rate of depreciation fluctuates slightly from year to year, during the last 14 years it has averaged about 5 percent of the value of farm buildings and 21 percent of the value of machinery, automobiles, and trucks.

4 Cash wages to hired labor plus an allowance of 25 percent for board and an additional 12½ percent of the eash wage to represent perquisites furnished hired labor and domestic hired labor contributing to production. Includes only that portion of interest payable by farm operators; figured at 75 percent of all interest payable on farm mortgage debt on real estate used in production and interest on all bank loans, other than real estate loans. It is assumed that 70 percent of all taxes on farm property used in production are paid by farm operators and that 72 percent of all rent paid is paid to nonfarmer landlords.

Table 464.—Current value of agricultural capital, gross income from jarm production, and selected expenditures. United States, 1909-33

				_	Se	lected ex	penditur	es:		
Year	Current value of agri- cultural capital ¹	Gross income from farm produc- tion ²	Wages (includ- ing board) ³	Feed 4	Ferti- lizer ⁵	Farm imple- ments (includ- ing autos and trucks)	Cost of operating autos, trucks, and tractors 7	Gin- ning ⁸	Taxes 9	Interest on mort- gages ¹⁰
1909	47, 778 47, 965 50, 533 55, 041 61, 576 66, 630 78, 136 62, 022 60, 856 60, 856 51, 610 57, 670 51, 812 43, 351	Million dollars 6, 238 6, 342 6, 372 6, 372 6, 7028 7, 395 8, 914 12, 832 15, 191 11, 337 11, 480 11, 616 11, 741 11, 941 9, 456 , 968 5, 331 6, 256	Million dollars 6524 673 697 721 696 696 701 766 701 763 1, 163 1, 1636 1, 1074 1, 118 1, 161 1, 175 1, 183 1, 164 1, 118 1, 163 1, 164 1, 175 1, 183 1, 164 1, 175 1, 183 1, 164 1, 173 4 475 428	Million dollars 3002 3772 3366 4653 4451 1,023 1,025 9558 851 855 959 9685 462 409 3553	Million dollars 1157 1152 1153 1152 1153 1152 1153 1153 1154 1155 1155 1155 1155 1155	Million dollars 2222 2237 2556 2570 284 315 359 453 569 453 568 725 671 654 8001 916 6777 366 186 215	Million dollars 2 4 8 8 15 15 14 4 4 4 4 4 4 67 116 181 246 230 410 324 226 2451 417 422 451 486 483 407 384 380	Million dollars 33 33 35 52 46 56 43 50 54 64 77 91 17 73 82 100 11.7 73 88 89 77 75 62	Million dollars 200 204 2110 212 213 222 243 250 292 311 393 483 510 509 511 517 526 545 556 567 566 569 385	Million dollars 199 210 221 232 240 252 252 252 269 299 3454 401 479 545 554 554 558 568 568 568 568 568 568 568 568 568

¹ As of Jan. 1. Includes land, buildings, machinery, and livestock. Estimates are census values for census years. The value of land and buildings for intercensal years is based on the index of land values per acre and a straight-line interpolation of total acreage in farms. Livestock values are annual estimates of the U.S. Department of Agriculture. Value of farm machinery is based on estimated purchases of farm machinery and changes in the prices paid by farmers for farm machinery.

² For years 1924-33, see table 463. The estimates for 1909-23 are based on items which represent about 95 percent of the gross income in 1924-33.

³ Estimates from 1909-24 based on interpolations between census estimates and the index of farm wage rates; 1924-33 upon farm-wage rate, changes in the number of hired laborers per farm, and the number of farms.

farms

farms.

4 From 1909 to 1919 interpolation between census years based on an index of prices paid by farmers for feed and an index of production of feed crops. From 1919 to 1933 estimates are based on prices of feed crops, production of byproducts feeds and sales of feed grains and hay which are not used in industry or exported.

5 Interpolated between census estimates based on estimated total fertilizer consumption and the U. S. Department of Agriculture index of fertilizer prices paid by farmers.

6 Value of farm implements interpolated between the 1909, 1914, and 1919 census value of implements produced, after adjustment to represent retail values. Interpolations for other years are based on factory values of farm implements sold in the United States and raised to retail values. Farmers' expenditures for automobiles and trucks are estimated from registrations in principal agricultural States and prices paid by farmers

by farmers.

Includes the estimated cost of operating trucks, tractors, and one-half of the cost of operating automobiles. Expenditures per vehicle are based upon changes in the prices of gasoline, kerosene, oil and tires, licenses, and estimated annual mileage. Cost of operation is estimated cost per vehicle times estimated number of

and estimated annual mileage. Cost of operation is estimated toos per vehicle times estimated in which or vehicles on farms.

8 Annual cotton production multiplied by ginning costs per bale.

9 Revised estimates of taxes are based on a study of real-estate taxes by States. In adjusting for total taxes it is assumed that the real estate tax is 55 percent and personal property tax is 15 percent of the total.

10 Interpolations between total farm mortgages for 1910, 1920, 1925, 1928, 1930, using smoothed estimates for 1911–19 derived from value of current agricultural capital, and smooth curve, 1920–30.

Bureau of Agricultural Economics; tentative estimates of the Bureau

Table 465.—Total population and farm population, United States: Total number Apr. 15, 1910, and yearly Jan. 1, 1920-35, annual movement to and from farms, and annual net change in the farm population 1920-34 1

			Fa	rm populati	on	
Year	Total popu- lation	.	Persons who	o during the	Net move- ment from	Net loss of farm popu-
	Jan. 1 ²	Number on Jan. 1	Left farms for cities	Arrived at farms from cities	farms during the year	lation during the year
1910		Thousands 4 32, 077 3 31, 614 31, 703 31, 768 31, 290 31, 056 31, 064 30, 784	896 1, 323 2, 252 2, 162 2, 068 2, 038 2, 334	7housands 560 759 1, 115 1, 355 1, 581 1, 336 1, 427	Thousands 336 564 1,137 807 487 702 907	7housands 5 89 5 65 478 234 5 8 280 503
1927 1928 1929 1930 1931 1932 1933 1934 1934	117, 364 119, 029 120, 694 122, 359 123, 630 124, 511 125, 197	30, 281 30, 275 30, 257 30, 169 7 30, 585 7 31, 241 7 32, 242 7 32, 509 7 32, 779	2, 162 2, 120 2, 081 1, 723 1, 469 1, 011 1, 178 994	1, 705 1, 698 1, 604 1, 740 1, 683 1, 544 951 783	457 422 477 6 17 6 214 6 533 227 211	6 18 88 5 416 5 656 1, 001 5 267 5 270

¹ Unless otherwise stated, these data are revised extimates based upon information furnished by farm families to the Bureau of Agricultural Economics adjusted to the trends indicated by the census data of 1920 and 1930.

Bureau of Agricultural Economics.

⁹²⁰ and 1930.

Except for 1910 and 1920, these are estimates by the Bureau of the Census.

Census enumerations as of Apr. 15, 1910, and Jan. 1, 1920.

Estimated by the Bureau of the Census.

Net gain in farm population instead of loss.

Net movement to farms during the year, a reversal of the earlier trend.

Estimates since 1930 subject to revision following next census enumeration.

Estimate not available when Yearbook went to press.

Table 466.—Farm returns, 1925-33 [Averages of reports of owner operators for their own ferms for calendar year]

1926 1927 13, 475 13, 859 315 275	Unite	United States				¥	Atlantic		Central		Central	Atlantic	atic	South		Western	orn.
475 13, 859 315 275	1928	1929	1930 16	1831 16	1932 16	1933 1932	1933	1932	2 1933	1932	1933	1932	1933	1932 1	1933	1932	1933
	11,851	11,805 6	6,228	7, 437 6,	, 383 6, 233	855 234	815 128 1	903 1, 2	292 1,387 144 135	7 1,382	1,312	867 190	921 178	1, 582 1	1,817	445	515 556
\$13, 379 \$12, 543 \$	\$12, 299 \$12,	2, 090 \$12, 009	2,009 \$10,	778	\$8, 170 \$7,	527 \$7,	024 \$6,8	831 \$9,0	087 \$7,87	879 \$12, 154	\$11, 023 \$5, 451		\$5, 319 \$5,	5, 567 \$5,	256	\$9, 781	\$10,853
2, 929 2, 893	3, 118	3, 152 3	3, 156 2	2, 426 1,	, 811	749 2,	462 2, 3	348 1,9	914 1,696	5 2, 520	3 2, 395	1,086	1, 021	1, 026	1, 078	2, 324	2,864
	946	1,029	179	572	337				1				692	410	616	514	1.024
894 589 638	936	881	765 635	471	313	296 386 1, 0	238 013 1,0	212 3	378 359 459 514	9 611	9 267	173	147	127 98	134	276 341	, 316 425
	37	37	32	75	14	٠ ا	.	-	- 1				17	6	8	24	25
2,448 2,505	2, 608	2, 669 2	2, 211 1	1,549 1	1,014 1,	222 1,	706 1,894	l,	061 1, 140	0 1, 103	3 1, 206	751	1, 069	644	879	1, 155	1, 790
	394	388	378	304	85				1			1	275	921	197	222	434
232 25	888	228	276	281	118 818	6 <u>7</u>	2 2 2 2 2	1 2 2 2	1001	200	- G	38;	885	T 700 C	22.9	128	144
	94	<u>\$</u>	<u> </u>	8 %	3 6								38	9 49	12.0	4	34 28
	184	1502	118	<u> </u>	2 8			166		211			27.22	18	385	193	88
	176	티	ם	167	114		- 1		_				ΞÌ	62	67	202	364
1, 473 1, 457	1, 518	1, 572	1, 452	1,001	757	807 1, 2	253 1, 3	365 7	703 669	892	782	623	759	466	512	885	1,396
975 1,048	1,090	1,097	759	458	257	416	453 5	520 3	358 471	211	424	128	310	178	367	273	394
158 242	244	201	-221	-304	-191	101	273	90	230 71	-309	82	-87	125	8	65	-95	344
1, 133 1, 290	1, 334	1, 298	638	154	99	516	9 081	619	119 642	2 98	502	41	435	88	432	178	738
215 201 128 141	202	125	199	196	17.08 8.00	91 04 1	115 1	110	176 159 30 32	294	263	88	88.83	125	39	88	34
282 273	269	262	242	200	191	163	184	183	156 158	3 156	153	188	198	145	152	144	152
779 768	768	772	716	809	448	470	616	640	498 501	1 527	532	208	333	286	331	605	620
+2 +61	+72	+27	-757 -1,	281	-1,036	+121(634	-28 -1, 167		+169 -1, 910	+135	1,503	+134	-656 -	+197	-1,070	19-

1 Average of farms for which the item was reported.

Bureau of Agricultural Economics; compiled from reports of individual farms operated by their owners.
Division averages for 1926-26 in 1927 Yearbook, table 479; for 1927-28 in 1930 Yearbook, table 510; for 1929-30 in 1932 Yearbook, table 469; and for 1931-32 in 1934 Yearbook, table 464.

Table 467.—Farm returns: Proportion of farmers obtaining net results within specified ranges, 1925-33

			١	1					ſ												
				Unit	United States	88				North Atlantic	th otic	East Cen	East North Central	West North Central	North tral	South	rth ntic	South	tral	Western	ern
<u> </u>	1926 16	1926	1927	1928	1929	1930	1831	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933
number	15, 330 13,	476 13,	3,8691	1,8511	1,805	6,28 8,28	7, 437	6, 383	6,855	815 128	903	1, 202	1, 387	1,382	1, 312	190	921	1, 582	1,817	445	515 556
dollars	17, 122 16, 1, 297 1,	333	1, 290	15, 417 15, 1, 334 1,	5, 242 15, 1, 298	538	13, 204	9, 981 66	9, 276 516	9, 486	9, 179 619	11, 001 119	9, 575	14, 674 98	13, 418 502	6, 537	6,340	6, 593	6, 334	12, 105 1	13, 717
11	!	11				II	U	Per-	Per-		Per- cent	Per-	Per- cent	Per-	Per-				Per-		
	<u> </u>								o:		1.2. 1.2.5	0.08	0.36	0.22	.i.e		. 1. 1.09		o. 89.75		
								385			1.75	3.42.5	1.73	28					1.05		
	v							2.57	6.7.5 8.25 8.25 8.25		9 6 5	. 25.55	322	2.75	9.6				5.50		
								. 64. 88.	48.02		4.6	45,43	48.09	33.50	32.33				8		
	1.64	888	e 4.8	2.5 8.28	1.03	19.73 24.73 10.43	6.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7	, 2000 2000 2000 2000 2000 2000 2000 20	14. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	84.89 24.88	17. 17 1. 77 44	30.4.2. 2.34.1 2.34.1 2.86.1	2. 2. 2. 2. 2. 2. 3.	3.25 2.28 3.28	7. 8.8.8 8.8.8	3,4,1, 2,72,5		¥. 2. ₹8. 6.	.55	3. 5. 3. 5	2.83 2.83 2.83
IR	+=-	18	18	00.00		-	100,001	00.00	100.00100.00100.	18	100.00	100.00 100.00	1	100.00	100.00		100.00	100.00	100,00	100.00	
	_	_	_		_	_	_	_		_											

Bureau of Agricultural Economics. The reports are those tabulated in table 466 (preceding). For distribution by geographical divisions in earlier years, see 1927 Yearbook, table 476, 1930 Yearbook, table 611; 1932 Yearbook, table 460; and 1934 Yearbook, table 465.

Table 468.—Cotton: Estimated cost of production, by selected States and regions, 1933 1

								,									
		Pro- duction	Aver-				Gross ec	Gross cost per acre	re re				<u>-</u>		Net cost of lint	of lint	
2000	Acre-	of lint in 500-	age		;		Forti-			;			per	Per 8	acre	Per pound	pun
Torgar of region	har- vested	pound gross- weight bales	of lint per acre 1	Prepare and plant 3	Culti- vate and hoe	Har-	lizer and manure	Seed	Gin- ning	mis- cella- neous ⁵	Land	Total	seed i	Includ- ng renti	Includ- Exclud- Includ- ng rent ing rent ing rent	includ- Exclud- Includ- Exclud ng rent ing rent ing ren	Exclud- ing rent
STATE	1,000	1,000 bales	Pounds	Dollars	lars	Dollars	lars		Dollars	873	Dollars	lars	Dollars	Dollars	Dollars	Cents	Cents
Carolina	1.090	684	314	3,54	5, 45	5.74	1.31	_	2.34	24	4.74	90.0	4.08	25.99	21, 25	80	6.8
South Carolina.	1,379	735	586	3.54	17.7	5.05	3.74	_	1.84	3	3.15	26.26		22.98	19.83	00°	2.2
Cheorgia	2, 147	1, 105	257		202	6. L3	3.5		2 20	32	288	3.5	200	10.64	16,02	0 0	7 -
88	28	443	25	3.6		5.45	88		28	38	86	18		23,16	18,48	9.5	7.4
Mississippi	2,859	1, 150	8	3.08	8	4.41	10.1		2.07	22	4.56	33.86		20.61	16.05	10.2	7.9
18.	1,295	477	25	83	33	4. 47	2:		75.0	800	4.38	60 60		27.79	17.32	8:15	4.0
	2,083	1,041	202	5.5	3.5	4. 7. 2. 7.	3,5		2 8	38	4, e	10.22		17.00	2 2 2	7.2	. e
Pexas	11, 488	4, 428	183	233	48.	4.35	24.	38	2,10	2.14	3.93	19, 15		16.57	12, 64	8.6	6.5
REGION		1				Ī	Ì	Ì							1	1	1
Plain 6		2,000	233			4,40	2.70	86.				88			17.46	50	× 20 1 × 1
1,11		1,317	R 8			4.62	÷ -	\$ 8				8.5			17.99	o 0	- t-
Hilly Breas "		1,000	5 6			312	200	22.				3 4			38	9	7:
hilly greas 10	5.345	1, 20	182	3 2	÷ 4	4 14	25		1.76	2, 42	3 6	88	2.41	18.47	14.90	10.1	. ca
st prafrie and Texas black		1					!	!							;	,	
117	4,958	1, 962	198			4.54	. 13	19.		- 68		19. 72				o i	
Western dry areas 12Irrigated areas 13	6, 265 590	2, 49, 49,	203 421	88	4.83 83	11.78	.27	8.8	24 4 22 13	10.38	9.69	18. 47. 41.	4.86	42.53	32.86	10.1	7.8
United States 14	29, 955	13, 032	218	2.87	4.24	4.84	1.07	.63	2.00	2,65	3.97	22. 46	2.88	19.58	15.61	9.0	7.2
The state of the s		-															

Preliminary estimates. In computing averages, data were weighted by acreage harvested.
 Dobtande by dividing in the production of lint in terms of 600-pound gross-weight bales by the acreage harvested.
 Includes halling and spreading manure.
 Includes picking and spreading manure.
 Includes picking and smapping cotton, barding to gin, and halling lint and contronseed to local markets.
 Includes miscellaneous labor, brigation (including water), dusting, picking sacks and sheets, crop insurance, use of implements, use of storage buildings, and overhead.
 Includes miscellaneous coasted plain of Yriguias, North Carolina, Soorgia, Florida, Alabama, Mississippi, Louisians, and the black prairie belt of Alabama, osested plain of Yriguias, North Carolina, Soorgia, Florida, Alabama, Mississippi, Louisians, and the black prairie belt of Alabama, and the coasted plain of Yriguias, North Carolina, Soorgia, Florida, Alabama, Mississippi, Louisians, and the black prairie belt of Alabama, Alabama, Rossippi, Louisians, and the black prairie belt of Alabama, Alabama, Rossippi, Louisians, and the black prairie belt of Alabama, Alabama, Rossippi, Louisians, and the black prairie belt of Alabama, Alabama, Alabama, Rossippi, Louisians, and the place of the coasted plant of Virguias, North Carolina, South Carolina, Georgia, Florida, Alabama, Alabama, Rossippi, Louisians, and the place of the coasted plant of Virguias, North Carolina, South Carolina, Georgia, Florida, Alabama, Alabama, Rossippi, Louisians, and the coasted plant of Virguias, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisians, and the coasted plant of Virguias, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisians, and Carolina, Alabama, Alabama, Alabama, Rossippi, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carolina, Carol

bams and Missistipul.

Therducks the rolling and Interpretation of Virginia, North Carolina, South Carolina, Georgia, and Alabama, which border the Blue Ridge Mountains on the east and south.

Includes the rolling and Interpretation of Lake County, the hilly cotton lands of northern Mississippi, northern Alabama, and northern Georgia, and western North Carolina.

Includes the principal bottom lands of the Missisppi, the Arkansas, and the Red Rivers.

Includes the principal bottom lands of the Missisppi, the Arkansas, Instance and the black waxy prairie of Texas.

Includes the Grif cast prairie of Texas and Louisiana and the black waxy prairie of Texas.

Includes the Grif cast prairie of Texas and essitem New Mexico.

Includes the Irrigated cottom lands of California, Arizona, New Mexico, and Texas.

Includes the Irrigated cottom lands of California, Arizona, New Mexico, and Alabama, Tennessee, Missisppi, Louisiana, Arkansas, Missouri, Oklahoma, Texas, New Maxloo, Arizona, and California, Worth Carolina, Georgia, Florida, Alabama, Tennessee, Missisppi, Louisiana, Arkansas, Missouri, Oklahoma, Texas, New Maxloo, Arizona, and California, Which produced 99.9 percent of the United States cotton crop of 1983.

Ruroan of Amelanthing Warmaning

Table 469.—Corn, wheat, and oats: Cost of production, 1933 1

			Ì										-		-		
	A Oraco A		Aver-				Gross	Gross cost per acre	acre				Credit	Net cost per acre	st per e	Net cost per bushel	t per el
Crop and group of States	har- har- vested	duction	age yield per acre	Prepare and plant	Cuitt- vate and hoe	Har-	Haul to market	Fertiliz- er and manure	Seed	Mis- cella- neous \$	Land	Total	for by- prod- uct	Includ- Exclud- Includ- Exclud- ing rent ing rent ing rent	Exclud- I ng rent i	nclud- I	exclud- ng rent
	1,000 acres 9, 222 13, 467	1,000 bushels 245,998 180,054	Bushels 26.7 13.4	Dollars 3.80 2.31	Dollars 2, 78 2, 34	Dollars 2. 59 1. 31	Dollars 1.34	Dollars 2, 06 1, 35	Dollars 0.31	Dollars 2, 87 1, 91	Dollars 3. 43 2. 46	Dollars 1 19. 18 12. 71	Dollars 2.14	Dollars 17.04 17.04 11.73	Dollars 1 13.61 9.27	Dollars 0.64	Dollars 0.51
4 8	17,961	379, 408 618, 340 351, 993	34.8 23.0	3.63 2.76 2.14	2,00 1,56 1,56	2.35 1.49 1.14	1, 12 90 83	1.77 .88 .42	28.2	2,88 1,92 92	3. 80 3. 36	17. 60 15. 44 11. 56	1.33	16. 27 14. 93 11. 02	12. 47 9. 72 7. 66	25. 43. 48.	9888
Kansas, Bouth Dakota, and Routh Dakota Western *	7, 884 10, 795 2, 270	100, 648 132, 114 30, 151	12, 8 12, 2 13, 3	1.81 2.01 2.27	1, 99	. 98. 1. 36	24.	.35 .26	828	2, 22 1, 67 1, 74	3.03 2.23 2.24 2.25 2.25	10.37 10.85 10.40	848	9.87 10.41 9.54	6.86 7.61 7.30	.72	.62
United States	88, 999	88, 999 2,038,706	22.9	2.03	1.90	1.61	88.	1,00	.25	2, 20	3.53	13.90	.87	13,03	9. 50	. 57	.41
Wheet: Rastern: North P. South V. Ohio, Indans, and Michigan.	2, 696 849 4, 231	41, 534 8, 009 71, 174	16.0 9.4 16.8	2,2,2,2 38,23,28		3.43 2.19	. 56	2, 64 1, 37 1, 87	1, 21	2.37 1.67 2.08	3. 61 3. 41	17. 36 11. 99 13. 87	2, 16 1, 00 1, 11	15.20 10.99 12.76	11. 59 8. 02 9. 35	.95 1.17	. 72 . 85 . 56
Missonri, minos, rows, and Missonri, Texas, and Oklahoma. Winnesde Morth District.	3, 435	50, 326 138, 179	14.7 9.3	1.49		2, 26	. 25	.73	. 42	1.83	3.47	11.65	. 18	10.86	7.39	1.00	. 71
South Dakota, Montana, and Wyoming.	16,760	122, 518 97, 235	7.3	2. 68 2. 68		1.54	88.	41.8	 	3,40	2.07 4.80	8,83 14,88	. 55	8.62 14.33	6.55	1.18	.90
United States	47,910	528, 975	11.0	1.98		1.86	. 39	. 50	. 63	2.62	2.89	10.87	. 47	10.40	7. 51	. 95	.68
	-		Ī														

84.	337	8	. 22	.39	8,8,	8.
- 63	84	<u> </u>	3	.57	4 .8.	. 47
10, 61	6.73	6.61	4.74	5, 45	% % 52 53	6.04
13.64	% o	9.77	9.12	7.91	11.28	9. 27
2.48	1.2	1.28	<u>.</u>	.45	1, 17	. 92
16.12	10.0 9.07	11.03	9.81	8.36	7. 57 12, 58	10.19
65	2,2	3, 16	4.38	2.46	-: c4 88 88	3, 23
2.38	1.57	1.96	1, 59	2, 02	1,31	1.88
8	20.53	22	.43	.35	2.8	. 52
1 20	1.16	9	01.	.14	8.2	. 35
2	. 65 £	1 28	.36	. 33	8 8	.46
85	2,0	1 84 1 84	1,90	1.71	.2. 25.82	2.08
	i i i i i i i i i i i i i i i i i i i					
27.	38	8	-i	1,35	-, % 68	1.72
	18,0		15 9	13.8	8.7 8.0	19.9
56 901	17, 427		222, 349	109, 342	44, 195 42, 631	731, 500
9, 579	967	8.062		7,917	1,469 469	36, 701
Oats: Eastern: North 4	of Other	Michigan, Wisconsin, and	owa- obraska, Kansas,	kota, and North	Southwestern 6	United States

1 includes threshing for wheat and onfs.

1 includes threshing for wheat and onfs.

1 includes threshing for wheat and onfs.

2 includes charges for water for trigation, twine and sacks, erop insurance, use of implements, use of storage buildings, overhead, and for wheat a charge for expenses incurred on screen shadowns for the water for the form of the west of the water for the form of the water for the states of the water form of the states of the states of the water form of the states States grouped mainly on a basis of production practices and yields. In computing averages, data were weighted by acreage harvested. Preliminary estimates.

Bureau of Agricultural Economics.

Table 470.—Index numbers of prices paid by farmers, 1910-34 [Calendar years 1910-14=100]

	(Comm	odities	used i	n prod	luction		to hired	ht for 1 plus hired	ht for	ction inte-
Year	Feed	Machinery	Fertilizer	Building materials for other than house	Equipment and supplies	Seed 1	All commodities bought for use in production	Wage rates paid to labor	Commodities bought for use in production plus wages paid to hired labor	Commodities bought family maintenance	All commodities bought for use in production and family maintenance
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1922 1923 1922 1923 1924 1925 1927 1928 1929 1929 1929 1929 1929 1929 1929	193 211 137 97 123 134 142 141 137 138 148 145 132 93 69	102 101 102 98 100 107 126 155 161 162 142 146 153 154 154 153 154 154 153 154 154 154 154 154 154 154 154 154 154	99 99 100 102 120 137 170 182 186 129 126 120 121 131 130 126 115 99 96	100 102 103 101 93 102 117 137 161 189 205 156 159 161 161 162 160 158 159 126 126 129	101 100 100 100 106 129 156 181 180 189 152 140 136 133 140 144 141 131 136 131 107 103	103 97 120 142 149 190 280 152 134 130 142 151 172 214 197 185 179 185 172 102 95	98 103 98 102 99 104 124 151 174 192 174 141 143 147 146 145 147 148 147 110 107 108	97 97 101 104 101 1102 112 140 239 150 166 166 168 171 170 169 170 170 170 170 170 170 170 170 170 170	98 101 99 103 99 103 121 149 174 195 189 143 141 145 152 152 153 153 143 120 102	98 100 101 102 107 124 147 210 222 161 156 164 162 159 164 162 159 168 118 128 128 128 128 128 128 128 128 12	98 101 100 105 124 149 176 202 201 152 155 153 155 153 145 1107 109 123

^{1 1912-14=100.}

Bureau of Agricultural Economics; compiled from prices reported to the Department of Agriculture by retail dealers throughout the United States. The prices used in constructing the above index numbers of prices paid by farmers are for constant quantities and sizes, but are not adjusted for changes in quality. Over a period of years marked changes may occur in the quality of certain commodities. For example, a study by the American Society of Agricultural Engineers indicated an improvement in quality of farm machinery of about 70 percent between 1910–14 and 1932.

The index numbers include only commodities bought by farmers; the commodities being weighted according to purchases reported by actual farmers in farm-management and rural-life studies from 1920 to 1925.

² Includes food, clothing, household operating expenses, furniture and furnishings, and building material for house.

Table 471.—Index numbers of farm prices, by groups, 1910-34
[August 1909-July 1914=100]

			Cal	endar :	year			Y	ear beg	inning	July :	l of yea	ar show	7n
Year	Grains	Cotton and cottonseed	Fruits	Dairy products	Chickens and eggs	Meat animals	All groups	Grains	Cotton and cottonseed	Fruits	Dairy products	Chickens and eggs	Meat animals	All groups
1910 1911 1912 1913 1914 1915 1916 1917 1917 1919 1920 1922 1923 1924 1925 1925 1927 1928 1929 1938 1949 1949 1950 1977 1978	104 96 106 92 120 120 127 233 232 2112 106 113 130 129 157 131 128 130 120 100 63 44 62 93	113 101 87 97 85 77 119 187 245 247 248 210 156 216 216 212 177 122 144 102 63 47 64 99	101 102 94 107 91 82 100 118 172 178 191 157 174 137 172 138 144 176 141 162 98 82 74 100	99 95 102 103 109 135 163 186 143 156 143 153 155 158 157 108 83 82 96	104 91 100 101 106 101 116 155 186 209 223 162 141 149 163 153 162 129 100 82 75	103 87 95 108 112 104 120 174 203 207 174 109 114 107 140 147 151 133 92 60 68	102 95 100 101 101 98 118 175 202 213 211 125 132 142 143 156 145 149 149 146 87 67 90	95 107 93 97 120 109 172 248 165 103 110 112 126 142 125 135 118 117 82 43 79	114 84 93 99 69 94 148 229 233 285 140 129 194 225 151 151 150 130 79 48 51 83	103 100 95 109 74 90 111 146 179 198 151 153 163 121 126 86 75 88	96 100 104 103 104 120 148 175 196 178 144 152 154 155 154 155 159 147 122 96 78 90	95 97 97 103 104 137 168 197 219 193 151 144 144 146 160 152 148 158 154 109 89 80 80	94 88 104 111 108 143 191 140 111 108 111 108 146 146 142 158 150 112 73 60	98 98 98 104 98 103 146 1228 128 138 142 149 154 146 147 146 147 146 147 146 147 148

Bureau of Agricultural Economics. See footnotes, table 472.

Table 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934

[August 1909-July 1914=100]

						,			. —				
Group and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver-
GRAINS 1910	104 85 97 123 112 160 219 217	112 90 107 87 97 135 115 168 228 215 246	112 89 110 87 98 136 111 178 236 220 249	109 90 117 88 99 138 112 217 236 234 263	107 92 123 92 101 139 112 251 245 276	105 94 121 94 99 126 110 245 228 247 284	107 97 115 93 97 118 113 249 228 250 266	106 99 106 95 104 114 128 247 229 250 241	102 101 100 98 111 105 138 232 229 235 222	97 104 95 97 109 101 147 223 222 225 194	92 103 88 96 108 99 158 214 216 223 158	91 102 83 96 111 102 157 214 217 232 139	104 96 106 92 102 120 126 217 227 233 233
1921 1922 1923 1924 1925 1926 1927 1928 1929	138 93 113 110 173 146 121 125 114 118	136 103 114 113 179 143 123 128 122 115	132 113 117 114 173 136 122 135 123 107	118 115 121 113 153 133 120 143 119 110	116 116 122 114 160 134 127 159 112 105	117 111 118 116 164 133 140 151 110 105	109 105 111 130 153 127 139 141 121 91	104 100 108 141 158 129 137 119 128 100	101 96 110 140 149 122 134 116 130 99	96 100 112 150 137 124 127 115 128 91	89 106 110 148 141 122 120 110 117	90 110 108 156 143 121 123 112 119 80	112 106 113 129 157 131 128 130 120
1931 1932 1933 1934	52	75 52 34 79	73 52 36 79	74 51 47 77	73 49 63 78	67 45 63 89	57 43 94 91	53 44 81 106	50 42 78 112	46 37 69 109	58 35 75 109	53 34 73 116	63 44 62 93

Table 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934.—Continued

											_		
Group and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
COTTON AND COT- TONSEED													
TONSEED 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1923 1924 1925 1928 1929 1929 1921 1920 1921 1921 1922 1923 1923 1924 1925 1926 1927 1928 1928 1928 1930 1931	116 117 71 97 96 60 100 148 244 223 93 129 203 256 182 132 152 147 128	113 114 76 96 99 65 99 143 249 207 294 89 128 215 247 184 141 94 141 148	113 112 81 95 99 67 148 256 205 298 80 131 224 220 193 133 102 147 153	113 114 85 95 98 73 101 160 251 213 303 76 135 222 226 185 101 154 152 120	114 116 89 94 100 74 103 168 235 231 303 78 141 222 184 130 166 148	113 116 894 101 72 107 189 234 249 301 78 159 208 183 131 119 162 146	113 110 93 94 100 70 108 204 234 260 199 169 126 126 125 170 145	115 100 92 93 86 70 115 199 246 256 91 160 190 136 130 136 153	112 88 89 101 66 81 128 196 263 252 218 130 161 175 175 179 142 146 83	111 777 88 106 58 98 144 252 277 175 150 168 222 171 94 169 147 141	113 71 91 102 54 99 162 232 236 295 137 188 238 178 148 88 162 146 146 79	115 70 97 98 57 99 160 237 235 291 101 131 195 253 177 139 81 153 148 130	113 101 87 97 85 77 119 189 245 248 101 156 212 212 177 122 123 152 144
1931 1932 1933 1934	72 45 45 45 82	76 47 44 93	80 50 48 94	78 46 49 94	74 42 65 90	65 37 69 94	71 41 84 99	53 51 71 107	47 57 69 110	42 51 71 107	50 47 76 107	73 45 43 77 109	63 47 64 99
FRUITS 1910	89 95 95 83 99 63 86 97 149 191 128 132 134 149 173 108 173 70 86	96 99 100 88 104 80 106 160 123 1216 123 187 111 148 111 120 157 99 76 64 87	100 100 102 98 107 65 86 108 174 185 220 127 204 143 111 161 152 113 190 121 166 104 80 85 97	104 117 104 109 113 76 88 115 167 193 141 202 150 119 171 162 119 123 123 187 109 86 69 96	117 120 114 120 121 86 99 124 190 208 241 153 232 168 118 120 224 132 214 113 214 110	117 121 108 133 96 112 137 184 201 231 173 224 160 227 161 148 205 148 210 118 93 86 137	103 108 94 111 95 114 130 190 187 171 197 171 198 148 156 200 151 195 110 81	95 92 94 119 76 93 116 111 195 167 168 140 172 121 166 163 157 169 88 74 74	101 99 88 115 68 91 111 107 204 171 172 164 150 121 138 181 125 182 173 156 159 93 83 78	106 103 80 113 70 86 117 120 170 170 155 119 143 180 181 174 147 187 188 189 189 189 189 189 189 189 189 189	90 88 76 100 64 89 97 123 140 162 130 118 119 163 110 164 127 145 110 75 74 70 94	90 888 777 92 92 93 137 148 182 127 122 102 122 140 101 166 125 158 97 74 85	101 102 94 107 91 82 100 118 178 191 167 178 137 125 179 138 141 162 98 82 74 100
COMMERCIAL TRUCK 1924 CROPS 1925	142 156 164 117 131 166 188 117 133 91	139 169 190 101 134 143 185 120 143 96 101	172 121 171 177 149 146 172 108 152 92 79	164 124 164 120 158 147 150 118 147 74 98	171 142 159 139 140 126 121 111 111 89 89	137 177 152 155 120 136 115 83 86 111 80	145 172 126 147 126 161 107 98 79 102 102	164 147 118 158 134 155 139 105 64 95 108	168 149 126 112 175 146 146 134 72 147	147 155 110 93 226 145 124 143 69 123 110	115 155 124 98 225 159 120 137 80 127 107	145 164 110 102 188 166 114 136 89 114 130	150 153 143 121 159 149 140 117 102 105
MEAT ANIMALS 1910	99 96 83 99 109 103 101 131 189 202 182	100 93 85 103 112 101 108 144 189 204 185	110 92 87 109 114 101 117 163 195 212 185	116 88 96 113 114 103 122 178 205 225 187	110 84 98 109 113 106 123 180 211 228 183	109 82 96 110 112 107 124 178 208 221 182	104 83 95 111 114 106 124 173 206 229 181	99 88 100 110 117 105 123 179 212 228 177	102 88 102 109 117 106 128 191 215 198 177	101 84 104 110 111 108 122 195 205 181 170	96 83 99 108 106 101 124 187 199 178 151	93 82 99 106 104 98 125 191 200 173	103 87 95 108 112 104 120 174 203 207 174

Table 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934—Continued

											,		
Group and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
MEAT ANIMALS— continued													
1921 1922 1923	123 96 111	119 109 111	125 119 111	114 118 111	111 120 109	105 122 104	109 121 106	113 115 105	101 113 113	98 114 107	93 109 101	92 108 99	109 114 107
1922	102 124 142	103 127 147	105 146 148	107 147 146	108 140 149	106 139 155	104 149 153	117 150 144	116 144 149	122 142 149	116 137 143	114 137 140	110 140 147
1927 1928 1929	141 138 146	144 139 154	144 140 160	144 142 164	137 151 164	130 151 163	131 157 167	137 162 164	142 174 156	146 160 150 123	142 150 144	139 143 143	140 151 156
1930	147 111 68	150 105 65	150 106 69	146 105 66	142 99 59	141 90 57	126 92 72	119 92 69	128 86 67	78 60	118 76 57	112 68 52	133 92 63
1934	51 55	53 65	56 66	57 64	65 64	66 64	66 66	64 68	62 82	64 74	59 72	52 73	60 68
DAIRY PRODUCTS													
DAIRY PRODUCTS 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1922 1923 1924 1925 1927 1928 1929 1930 1931 1932 1933 1934	104 100 109 108	101 97 105 108	100 94 104 109	100 90 103 107	95 88 100 102	94 88 97 100	94 90 96 99	95 92 96 99	98 95 99 103	100 96 103 105	102 101 107 109	102 104 110 110	99 95 102 105
1914	107 109 108	104 107 106	102 103 109	99 103 108	99 102 105	97 99 102	98 98 102	100 98 106	103 99 108	104 102 114	107 105 121	108 108 124	102 103 109
1917	124	127 161	125 155 180	131 152 184	130 151 178	127 151 174	127 151 176	132 155 181	139 165 185	147 177 194	150 184 205	156 190 209	135 163 186
1920 1921	185 208 181	176 205 172	203 172	205 164	195 143	191 137	191 140	193 147 136	197 147 142	200 154 147	200 156 154	187 154 165	198 156 143
1922 1923 1924	143 164 171	142 162 168	160	137 161 149	134 152 142	137 149 141	137 147 139	151 134	159 140	166 142	172 143	171 151	159 149
1925 1926 1927	149 162 162		153 154 160	149 148 159	148 145 153	147 144 148	147 144 146	151 143 144	153 149 150	163 151 156	164 158 158	163 162 163	153 152 155
1928	164 163	163	160 163	156 160	154 156	152 153	151 152	153 153	159 155	161 158	162 157	165 155	158 157
1930	- 146 - 118	113	115	141	102	131 98 74	129 98 74	134 102	139	140 112	110	129 106	137
1932	- 97 - 81		71	85 72	80 78	80	1 88	85	80 89	81 91	92	84 88	83 82 96
1934	- 84	92	95	91	91	93	94	97	99	100	105	107	96
CHICKENS AND EGGS									1	100		1,00	104
1910	- 127 - 114	91	. 79	76	76	75	90 77 84	91 82	90	108	172	126 121	104 91
1912	123) 98	1 88	82	84	: I 86	87	91	. 102	108 119	133	121 138	100
1914	128	114		1 87	' 88	90		. 1 88	ll 98	109		133 132	106 101
1916	125	111	92	91	. 98	1 98	101	107	120	137	151	162	116 155
1917	162		153	152	144 153	151	167	175	189	205	5 227	254	186
1919	240	170)] 171	183	196	185	193	200) I 206	228 243	252 267	1 288	209 223
1920	261 236	158	145	12	118	120	134	149	153	179	213	216	162
1922	150	3 152	113	116	119	118	118	1127		160 163			141 146
1924	16	2 157	7 114	111	116	121	126	136	155	176	199	211	149 163
1925	200		134	1 139	142	144	144	143	158	174	200	208	159
1927 1928 1929 1929 1930 1931	17	3 149	3 12	2 12	111	} 10(118	3 126		168	187	192	144
1928	170	3 16	1 149	9 1 13	5 1 14	147	149	15	188	181	198	200	162
1930,	17	7 150				8 10	10	5 11		137	1 124	120	100
1932	- 1	0 7	4 6	6 6	5 6	4 6	8 6	7	81 86	10:	2 [112	117	82
1933 1934	- 8	5 6	0 5	8 5	8 6	8 4 5 5 7	8 6	8 8				94	89

Table 472.—Index numbers of farm prices, United States, 1910-34, as revised in 1934—Continued

Group and year	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver- age
MISCELLANEOUS FARM PRODUCTS													
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1922 1922 1923 1923 1924 1925 1927 1928 1929 1930 1931 1932 1932 1933 1934	198 211 247 140 139 153 145 146 176 139 152 162 157 112	100 92 113 92 100 87 104 170 197 203 242 123 144 142 143 134 134 137 134 141 137 134 145 149 99 64 54 98	97 94 123 89 99 91 111 192 181 255 117 133 132 138 134 178 138 124 140 99 66 53 98	92 97 134 87 99 116 216 217 181 293 107 131 137 131 205 138 142 102 65 96	88 100 138 87 109 95 119 239 168 326 102 131 131 133 127 199 149 143 100 63 64 92	86 108 132 87 102 238 165 191 318 103 133 129 136 131 175 173 128 119 142 91 569 90	92 126 118 91 105 94 124 212 181 134 136 139 153 171 168 124 129 93 61 100 94	96 126 105 104 90 128 196 213 227 228 142 162 151 166 172 161 121 154 119 91 73 116 125	96 111 100 108 95 86 132 159 209 236 177 134 146 136 148 161 148 161 143 121 161 123 121 129	90 100 101 111 89 87 134 198 254 162 152 137 138 157 138 120 147 120 142 93 137	90 98 109 86 92 143 194 211 137 132 137 133 179 159 125 146 61 101 123	91 104 93 104 87 94 149 1205 250 148 138 138 131 141 142 142 154 71 70 104 113	98 104 111 97 97 91 124 196 195 213 227 127 135 140 141 151 172 146 133 140 131 90 67 87 83 108
ALL GROUPS 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1922 1922 1922 1922 1922 1922	99 96 97 105 97 104 141 198 229 142 123 146 153 133 149 149 145 101 71	105 96 98 97 105 148 200 197 228 130 128 144 154 154 154 154 140 95 88 83	105 95 100 98 104 96 107 156 197 229 127 130 143 143 145 145 145 145 145 145 145 145 145 145	106 95 104 99 102 99 110 173 197 206 239 113 133 143 143 143 144 136 97 58 82	103 95 107 98 103 101 111 185 193 244 113 134 141 152 155 142 155 144 92 68 82	102 96 104 100 103 99 113 186 193 242 113 136 137 138 156 148 150 148 150 148 150 148 150 161 181 186 186 186 186 187 188 186 186 186 186 186 186 186 186 186	101 98 101 99 103 97 114 183 197 220 231 1136 134 136 134 139 158 149 152 149 152 149 152 149 152 153 86 83 83 87	100 98 99 102 95 119 181 223 213 123 123 124 147 140 141 145 145 155 79 96	102 95 98 105 99 96 125 183 215 197 129 142 141 145 148 149 155 143 149 150 80 66 80 103	101 93 98 108 95 100 131 188 209 183 134 143 144 145 148 148 148 149 113 77 64 78	99 92 97 107 94 101 138 189 205 137 145 156 138 147 146 145 110 79 62 80 101	99 94 97 105 95 101 140 194 208 138 148 148 148 147 147 147 104 75 63 78	102 95 100 101 101 191 182 113 211 125 132 143 146 146 126 87 65 70

Bureau of Agricultural Economics; prices of farm products received by producers collected monthly from

Bureau of Agricultural Economics; prices of farm products received by producers collected monthly from a list of about 12,000 special price reporters.

This list is made up almost entirely of country-town dealers, elevator managers, buyers, and merchants. The commodities by groups are as follows: Grains—wheat, corn, cats, barley, rye, rice. Cotton and cottonseed. Fruits—apples, oranges, lemons (California), grapefruit (Florida), pears. Meat animals—cattle, calves, sheep, lambs, hogs. Dairy products—milk (wholesale), milk (retail), butter, butterfat. Chickens and eggs. Miscellaneous—potatoes, sweetpotatoes, tobacco, peanuts, wool, flaxseed, beans (dry edible), hay, horses, and mules. Commercial truck crops—tomatoes, lettuce, cantaloups, onions, cabbage, celery, beans (snap), watermelons, asparagus, peas (green), cucumbers, spinach, carrots. These index numbers of commercial truck crops, as constructed, are adjusted for seasonal variation in that the index number for any month is a percentage of the 6 corresponding months in the base period and were not constructed in unadjusted form, nor in the adjusted form prior to January 1924.

Table 473.—Index numbers of wholesale prices, by groups of commodities, United States, 1910-34:

[Calendar years 1910-14=100]

						-		•				-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Year	prod-	Foods	and leather prod-	prod-	and light-	and metal prod-	ing mate-	icals and	furnish- ing		com- modi-
	1911 1912 1913 1914 1919 1916 1919 1916 1919 1919 1920 1921 1922 1923 1924 1925 1927 1928 1929 1930 1931 1932 1933 1933	94 100 100 100 118 181 221 221 221 132 138 140 154 147 124 91 688	96 104 100 100 100 117 185 201 213 140 136 155 155 140 116 95	91 100 106 110 117 145 195 270 266 169 162 157 163 155 167 188 189 155 134 113	99 99 97 97 96 125 124 240 293 168 178 192 178 170 161 143 118 98	89 98 116 107 107 1207 198 311 184 204 185 175 183 190 168 160 158 149 128 133 128	95 106 94 101 137 160 154 175 175 175 123 122 121 117 113 114 118 99 94	100 101 103 96 97 122 160 279 279 279 176 176 185 181 172 170 173 163 164 129	100 99 100 138 198 203 203 203 142 124 122 125 123 119 118 116 116 98 90	96 97 103 104 103 112 136 127 190 207 190 200 192 183 179 173 170 156 138	99 95 85 82 91 1122 126 152 152 128 99 84 85 99 91 85 75 75 75	100 99 100 100 100 120 107 120 200 200 200 200 144 144 144 145 144 145 144 145 144 147 149 140 140 140 140 140 140 140 140 140 140

¹ Computed by reducing to a 1910–14 base the Bureau of Labor Statistics series, 1926=100; the index numbers for each group on the 1926 base are divided by the monthly averages for 1910–14. The averages used for each group are as follows: Farm products, 71.3; foods, 64.5; hides and leather products, 64.5; textile products, 56.3; fuel and lighting, 52.7; metals and metal products, 85.3; building materials, 55.2; chemicals and drugs, 81.2; house furnishing goods, 54.6; miscellaneous, 110.1; and all commodities, 68.5.

Bureau of Agricultural Economics.

Table 474.—Farm-wage rates: Averages and index numbers, 1909-34

	Αve	rage y wa	early fage 1	arm	ge rate	wages 3		A∀€	erage y wa	early f	arm	ge rate	wages 3
Year	Po mon	er th—	P. day		d average wage per month ²	s of farm	Year	P mon	er th—	P	er y	d average wage per month \$	s of farm
- 7	With board	Without board	With board	Without board	Weighted ave	Index numbers of farm wages ⁵		With board	Without board	With board	Without board	Weighted ave	Index numbers of farm wages ⁸
1909	Dol. 20, 48 19, 58 19, 58 20, 46 21, 27 20, 90 21, 08 23, 04 28, 64 24, 24 47, 24 30, 25	Dol. 28. 09 28. 04 28. 33 29. 14 30. 21 29. 72 29. 97 32. 58 40. 19 49. 13 56. 77 65. 05 43. 58	Dol. 1. 04 1. 07 1. 12 1. 15 1. 11 1. 12 1. 24 1. 56 2. 05 2. 44 2. 84 1. 66	1. 40 1. 44 1. 48 1. 44 1. 45	23. 08 23. 25 24. 01 24. 83 24. 26 26. 83 33. 42 42. 12 49. 11	96 97 97 101 104 101 102 112 140 176 206 239 150	1922 1923 1924 4 1925 4 1926 4 1927 4 1928 4 1929 4 1930 4 1931 4 1932 4 1933 4 1933 4 1933 4	Dol. 29. 31. 09 33. 34 86 34. 58 34. 66 34. 74 23. 60 17. 53 15. 86 17. 89	47, 22 47, 80 48, 86 48, 63 48, 65 49, 08 44, 59 35, 03 26, 67 24, 51	1.88 1.89 1.91 1.90	2.45 2.46 2.48 2.48 2.42 2.16 1.21 1.18	Dol. 34. 91 39. 64 39. 67 40. 12 40. 88 40. 60 40. 44 40. 52 27. 61 20. 46 19. 17 21. 50	146 166 168 171 170 169 170 152 116 86 80 90

Bureau of Agricultural Economics. Data for earlier years in 1928 Yearbook, table 531.

¹ Yearly averages are from reports by crop reporters, giving average wages for the year in their localities.
2 This column has significance only as an essential step in computing the wage index.
3 Calendar years 1910-14=100.
4 Weighted average of quarterly reports, April (weight 1), July (weight 5), October (weight 5), and January of the following year (weight 1).

Table 475.—Wages for male farm labor, by geographic divisions, quarterly, 1934

Division	Pe		ith, w	ith	Per:		h, wit	hout	P	er da: boa	y, wit rd ¹	h	Per	day, boa	with	out
	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.
East North Cen-	24. 40 19. 80	25, 74 22, 39	23. 17	27. 07 23. 17	43. 96 34. 21	46, 56 36, 80	48. 12 37. 49	Dol. 47. 68 37. 64	1. 43 1. 24	1. 47 1. 31	<i>Dol.</i> 1. 62 1. 39 1. 08	1. 61 1. 46	2.09 1.75	2. 16 1. 82		2. 29 1. 98
tral West North Central South Atlantic East South Cent	14, 13 13, 38	18, 89 13, 38	19. 26 13. 71	19. 17 14. 45	23. 08 20. 02	27. 92 20. 18	27. 69 20. 41	28. 83 27. 56 21. 20	.88 .71	. 97 . 72	1.03 .76	1.04 .77	1. 23 . 93	1.37 .96	1.41 .97	1. 44 1. 02
tral West South Central Mountain Pacific	14. 87 23. 03	15, 59 26, 45	15. 67 28. 08	16. 20 28. 95	22. 30 34. 54	22. 90 39. 54	22. 98 41. 02	19. 40 23. 45 41. 26 53. 68	. 78 1. 13	. 80 1, 23	. 82 1. 31	. 82 1. 35	1. 03 1. 56	1.02 1.71	1. 01 1. 78	1.06 1.85
United States	15. 73	17. 70	18. 18	18. 63	24. 90	26. 88	27. 29	27. 83	. 87	. 93	. 97	1.00	1. 21	1. 27	1.30	1.34

¹ Includes piecework.

Bureau of Agricultural Economics; as reported by field and crop reporters.

Table 476.—Farm real estate: Index numbers of estimated value per acre, by geographic divisions, 1912-35 1

[191	ο.	11.	_ 7	$\Delta \Delta T$

Year	New Eng- land	Middle Atlan- tic	North	West North Central	South Atlan- tie	East South Central	West South Central	Moun- tain	Pacific	United States
1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1922 1923 1924 1925 1928 1927 1928 1929 1929 1930 1931 1932 1931	127 127 126 127 126 116 105	98 100 102 100 104 112 117 121 136 127 118 116 114 113 111 110 109 109	97 100 103 104 1106 127 135 161 151 132 128 121 116 111 100 96 87 77	97 100 103 105 114 122 134 147 150 142 126 121 115 112 109 97 97 81	98 100 103 98 108 119 125 161 152 151 148 149 137 134 128 128 116 9	97 100 103 98 109 120 140 163 163 163 149 141 133 130 128 128 117 77	96 100 104 100 103 116 134 143 139 139 139 144 144 139 137 136 136 121	98 102 1000 98 98 98 106 117 133 122 115 110 105 101 101 101 101 102 100 99	94 99 106 107 111 122 129 136 155 151 148 147 144 144 142 142 142 140 140 140 196	97 100 103 103 108 117 129 140 157 139 135 130 127 124 119 116 115 106 89 73
1934	104 104	82 83	65 68	68	² 87 92	85 93	88 91	69 70	97 101	79

 $^{^{1}}$ All farm land with improvements, as of Mar. 1. Owing to rounding of figures, 1912–14 will not always equal exactly 100 percent. 2 Revised.

Bureau of Agricultural Economics; based on values as reported by crop reporters.
Values as reported by the census for 1910, 1920, and 1925 will be found in 1927 Yearbook, table 511.
For details by States since 1912, refer to Stauber, B. R. The Farm Real Estate Situation, 1932–33, U. S.
Department of Agriculture, Circular 309, 68 pp. illus. 1933.

Table 477.—Number of farms changing ownership by various methods, per 1,000 of all farms, by geographic divisions, 12 months ended Mar. 15, 1930-34

								,		7
Method of sale and year	New Eng- land	Middle Atlan- tic	East North Central	West North Central	South Atlan- tic	East South Central	West South Central	Moun- tain	Pacific	United States
Voluntary sales and trades: 1 1930	thou- sand 30. 7 30. 7	Number per thou- sand 28. 3 24. 5 20. 4 21. 0 20. 1	Number per thou- sand 20. 8 18. 6 16. 8 15. 6 16. 5	Number per thou- sand 22. 9 18. 9 14. 2 13. 8 15. 5	Number per thou- sand 18. 2 14. 5 12. 3 15. 3 17. 6	Number per thou- sand 23. 9 19. 4 17. 2 18. 9 19. 1	Number per thou- sand 24. 2 16. 7 15. 4 17. 6 18. 8	Number per thou- sand 38.7 24.8 17.6 16.8 17.5	Number per thou- sand 30.1 22.1 22.3 21.3 20.9	Number per thou- sand 23. 7 19. 0 16. 2 16. 8 17. 8
1930	11. 2 9. 7 15. 5 19. 8 20. 1	13. 1 13. 8 18. 0 28. 3 26. 2	22, 3 24, 0 34, 3 43, 9 32, 0	27. 5 31. 3 52. 5 72. 0 50. 9	23. 2 32. 2 47. 1 59. 5 40. 7	16. 1 25. 9 50. 6 63. 5 44. 9	16. 8 22. 4 40. 2 51. 2 34. 3	29. 4 36. 4 43. 5 52. 8 44. 1	15. 2 25. 0 37. 6 44. 1 37. 1	20. 8 26. 1 41. 7 54. 1 39. 1
1930 1931 1932 1933 1934 Administrators' and executors' sales; ³	10. 3 8. 8 10. 2 11. 9 10. 9	8. 2 8. 5 9. 0 11. 2 11. 7	9. 4 9. 3 11. 0 13. 3 13. 1	9. 8 9. 7 9. 8 12. 9 11. 8	11. 4 12. 5 13. 3 16. 7 16. 1	9.3 9.9 11.1 13.7 12.7	7.6 7.4 8.8 11.8 11.2	7.0 6.9 7.8 9.5 9.9	7.3 6.6 7.5 11.2 10.3	9. 3 9. 4 10. 4 13. 1 12. 6
1930 1931 1932 1933 1934 Total, all classes: ³	7. 1 5. 5	7.0 7.0 6.1 7.9 8.4	7.8 7.5 8.1 7.6 7.7	6. 2 5. 4 4. 9 6. 1 5. 7	7.9 6.5 8.1 10.2 9.9	5. 8 5. 6 6. 2 7. 5 6. 5	3.3 3.4 4.9 4.8 4.9	4.7 3.6 4.5 4.1 4.5	3.6 3.6 4.3 3.9 3.3	6. 1 5. 7 6. 2 7. 0 6. 7
1930	60. 2 56. 1 60. 5 63. 5 58. 4	58. 0 55. 5 55. 3 69. 9 68. 3	61. 6 60. 9 72. 4 82. 7 71. 4	68. 0 66. 8 83. 8 107. 1 85. 9	62.7 68.3 83.4 104.9 87.3	56. 5 62. 6 87. 2 106. 6 85. 9	53. 3 51. 6 71. 3 88. 3 71. 6	81. 7 72. 8 75. 5 85. 4 78. 1	57. 6 58. 1 73. 7 82. 7 74. 3	61. 5 61. 9 76. 6 93. 6 78. 6

Including contracts to purchase (but not options).
 Includes all other sales in settlement of estates.
 Including miscellaneous and unclassified.

Bureau of Agricultural Economics; based on returns from crop reporters.

Table 478.—Farm real estate taxes per acre, by States and geographic divisions, 1913-33

State and geographic division	1913	1914	1915	9161	1917	1918	1910	1920	1921	1922	1923	1924	1925	1928	1927	1928	1929	1630	1931	1932	1933
Maine New Hampshire. Vernour. Massachusetts. Rhode Island. Onneciteut.	0.32 0.33 .33 .88 .88	0.32 0.32 .35 .95	0.33 0.33 .98 .98	Dol. 34 .38 .38 1.02 .55	0.38 0.38 1.08 1.09	Doi	Dol. 51 . 51 . 51 . 70 . 95	. 657 . 67 . 67 . 1. 55 . 1. 98 . 1. 98	. 60 0.55 0.55 1.66 1.12 1.12	. 50 . 50 . 50 . 1.78 1.78 1.20	Dod. 0. 63 . 64 1. 81 1. 82 1. 23	. 64 . 64 . 50 1. 87 1. 28	. 60 0. 62 . 69 1. 51 1. 98 1. 36	. 72 . 72 . 72 . 52 2. 14 1. 16	0.70 0.70 0.70 1.1.23 1.1.23 1.1.23	. 55 1. 26 1. 46 1. 46	. 81 . 56 . 16 . 16 . 17 . 17 . 18 . 17 . 18 . 17 . 18 . 17 . 18 . 18 . 18 . 18 . 18 . 18 . 18 . 18	. 76 . 76 . 57 2. 12 2. 12 1. 36 1. 16	. 56 . 56 . 56 . 15 . 15 . 16 . 1. 64	Dol. 1 0.78 . 70 . 51 2.16 1.39 1.58	\$555 <u>5</u> 555
New England	.41	.43	.44	.46	.51	53.	. 62	.74	.77	38.	.85	98.	.90	96.	86.	. 99	1, 01	1.02	1.03		
New York New Jersey Pennsylvania	.45 .76 .50		88.	483	.97	22.8	5.1.2	78:1 28:	8.28	1.94	1.98	1.21 1.05 1.05	1. 04 1. 11	1.06 2.35 1.16	1.07 1.18	1.07 2.50 1.24	1.88	1.30	1.04 1.04 1.27	2.38 1.22	1.09
Middle Atlantic	.49	. 50	.54	.56	.62	99.	22	86.	16.	. 99	1.05	1.09	1.13	1.17	1, 19	1. 22	1,21	1.24	1. 22 1	1.15	
Ohio	88424	25. 25. 25. 25. 25.	88884	25.23.2	85848	22533	28.82.68	11.11.11	1.06	1.28	11111	1.1.1.1. 24.2.1. 24.2.2. 25.2.2.2.	1.1401.31	1.38	1. 44 1. 36 1. 35 1. 07	111111111111111111111111111111111111111	1.30 1.38 1.38 1.13	1.36 1.41 1.16 1.34 1.07	1. 15 1. 32 1. 03 1. 18	26.52.52	. 91 . 55 (1) (1)
East North Central	. 52	.51	. 57	49.	8	17.	88.	1, 10	1.18	1, 19	1. 19	1.20	1.21	1.21	1.25	1, 25	1.27	1.25	1.10	.90	
Minnesota Lowa Missouri North Dakota South Dakota South Dakota Kansas	8824339	25551555 2551555	8899758	82323882	*45 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =	\$555888	<u> </u>	558433	5283442	1.3 2.4 4.4 4.4 4.4 4.4 4.4 4.4 4.4 4.4 4.4	25.04. 25.04. 25.04. 25.04. 26	52.488.88	85.1. 61.5. 75. 75. 75. 75. 75. 75. 75. 75. 75.	8 1 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1.14 45 38 44 46 56	1, 16 1, 16 1, 15	827-88-3-38	784.38.44.33. L	\$5.48838 	2228884	2888888
West North Central	. 24	.25	.27	88	.32	₹6.	.46	46.	. 50	. 57	. 58	. 57	88.	.58	68.	89.	19	.61	99.	.47	. 42
Delaware Maryland Virginia Virginia North Garolina South Carolina Georgia	22.53.53.54.50.45.54	8484843	22.22.22.23.28	4.4.988.23.38.23.23.23.23.23.23.23.23.23.23.23.23.23.	8877847778	20 20 20 20 20 20 20 31 31	26888888	8228128884	827.88.84.88.84.4	258838888	88 8 8 8 7 7 9 8 8 8 8 7 7 9	888438882	588448888	68 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	200 8 4 8 9 6 8 4 4 8 9 9 8 4 8 9 8 4 8 9 8 9 8 9 8 9 8 9	48 8 4 4 4 4 6 8 8 8 8 8 8 8 8 8 8 8 8 8	4224.00.00.00 200.00.00.00	238 4 4 8 8 9 5 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	28242982	58828282	66.52 28.53 28.53 28.53 28.53 28.53
South Atlantic	14	.15	.16	.17	61.	. 22	. 26	. 33	.36	.37	.40	\$.46	. 47	.47	.48	.48	.45	.42	.38	
-	Ï	İ	Ï		+	-	1	-		+	t	İ	İ			-		L		_	

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8.48.8	88	8427	83.	252 262 263 263 263 263 263 263 263 263 26	. 46
23.33	. 42	% द्धं सं	.27	81. 88. 17. 17. 17. 18. 18. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	. 53
47 25 25 64	. 45	22.74.83	.30	4.59.98.99.99.99.99.99.99.99.99.99.99.99.99	. 57
. 47 . 25 . 68	. 45	.32 .46 .22	.29	25.00.00.00.00.00.00.00.00.00.00.00.00.00	. 58
84.83. 79.	.44	.83 .43 .22	.28	28. 28. 29. 29. 29. 29. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	. 58
248g	.43	81348	.27	.13 .08 .08 .22 .22 .22 .12 .14 .11 .14 .13	. 57
4887	. 42	8488	97.	48. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	. 56
4448	.41	25. 24. 28.	. 27	883.00.000.000.000.000.000.000.000.000.0	. 56
3888	.42	88.41	.27	25. 26. 26. 26. 27. 28. 28. 28. 29. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	33.
4883	.41	8448	. 26	4.8.9.2.2.4.8. 8.1. 88.1. 85.1	33.
4482	. 39	84. 14.	. 25	4.58.9.5.1.4.2. 01. 88.5.1. 87. 87. 87. 87. 87. 87. 87. 87. 87. 87	. 54
4.85.4	.38	42.04. 1.04.	. 25	7.4.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.	42
8.458	.36	8.58.91	. 24	4888444 63. 888 85	19.
31:28	. 26	82.25	. 22	814. 824. 824. 824. 824. 824. 824. 824. 82	4.
8.8.4.E	. 22	42.83.5	71.	08881201821 21 2233 4	88
8225	. 19	8821	. 15	015.50.50.50.50.50.50.50.50.50.50.50.50.50	E
88238	.17	8222	.13	\$6.50 88.25 II 01 88.14 88.	88
2213	.15	7388	.13		98.
811.01.	.15	33.57.86	H.	824238821 01 224 8	. 24
8469	.14	5888	11.	88. 88. 88. 88. 88. 74. 74. 88. 88. 88. 88. 88. 88. 88. 88. 88. 8	.24
Kentucky Tennesseo Alabama. Mississippi	East South Central	Arkansas Louisiana Okahoma Texas	West South Central	Montana Idaho Idaho Wyouning Colorado New Mexico Arisona Utah Nevada Mountain Washington Origon Oalifornia	United States

¹ Figures not yet computed.

³ Preliminary; based on figures for 35 States.

Bureau of Agricultural Economics.

Table 479.—Farm real estate taxes per \$100 of value, by States and geographic divisions, 1913-33

State and geographic division	1913	1914	1015	1916	1917	1918	1919	1020	1921	1922	1923	1924	1925	1926	1927	1928	1029	1930	1861	1932	1933
Maine. New Hampshire. Vernout. Masgachusets. Riode Island. Connectiout.	Dol. 1.26 1.16 1.21 1.21 1.21	1.28 1.28 1.25 1.36 1.36 1.36 .76	1.29 1.29 1.33 1.33 1.33 1.33	1.18 1.27 1.27 1.30 1.30 .79	1. 29 1. 29 1. 28 1. 28 1. 26 1. 26	1.21. 1.31. 1.30. 1.30. 1.30. 1.85.	2.5.2.1. 2.5.2.2.1. 2.5.2.2.2.2.3.3.3.3.3.3.3.3.3.3.3.3.3.3.	1. 59 1. 59 1. 59 1. 08	1.05 1.05 1.05 1.05 1.05	Dol. 1.71 1.32 1.75 1.13	Dol. 1. 67 1. 86 1. 36 1. 75 1. 12 1. 12 1. 12	Dol. 1. 62 1. 67 1. 43 1. 74 1. 10	1. 76 1. 76 1. 76 1. 76 1. 06 1. 15	1. 74 1. 84 1. 84 1. 10 1. 10	1. 93 1. 93 1. 93 1. 82 1. 00 1. 08	2.06 2.06 1.49 1.72 1.07 1.07	Dod. 1.81 1.1.81 1.1.49 1.1.07 1.1.05	Doc. 1. 95 1. 94 1. 94 1. 11 1. 11 1. 06	22.19 2.19 1.64 1.19 1.14	2.2.45. 1.28.45. 1.28.17. 1.128.	255-555 44 555
New England	1.07	1.13	1.12	1.05	1.13	1.12	1.15	1.38	1.40	1.48	1. 52	1.51	1.51	1. 58	1.56	1. 55 1	1.53	1.56	1. 70	1.78	
Now York Now Jersay Pounsylvania	8.8.8.	888	8.5 8.5 8.5 8.5	888	1.04	1.03	1.04 1.04 1.09	1.33	1.38	423	1.59 1.59 1.44	1. 44 1. 54 1. 46	1.45	1.52	1.53	1.56	1.58	1.52	3.48 8.18	1.69 1.54 1.54	EE.1
Middle Atlantic	.84	88.	. 92	96.	96.	1.00	66.	1.25	1.37	1.41	1.46	1.46	1.48	1.61	1. 52 1	1.53	1.51	. 63	1.69	1.84	
Ohio. Indiana. Illinois Michigan. Wisconsin.	1. 42 1. 42 1. 45 1. 65	1.05 1.05 1.72	42.1 24.1 17.	87. 80.1. 1.00 1.00 1.00	E5824	544.1 64.2	74 71 1.43 1.42 90	1.08	1.26 1.49 1.76 1.76	1.34 1.52 1.73 1.75	1. 34 1. 63 1. 74 1. 78 1. 19	1.46 1.70 1.74 1.18	1.73 1.73 1.88 1.81 1.14	1.65 1.84 1.84 1.20 1.20	1.79 1.87 1.98 1.96 1.32	1.36 1.98 1.96 1.36	1.79	1. 89 1. 21 2. 08 1. 22 1. 52	2.2.46 1.31 1.44 1.44	1.98 1.92 1.80 1.30	1.1.05 2.1.03 2.03 2.03
East North Central	. 63	.61	. 65	.09	8.	.67	02.	.91	1.12	1.14	1. 19	1.23	1.29	1.37	1.44	1,45	1.51	1.65	1.73	1.67	
Minnesota Jowa. Missouri North Dakota South Dakota North Ra. Nobriska.	25 25 38 38 38 11	2423882	38 19 33 37 51	334818863	88222888	8486482	8488488	02.52.1. 08. 08. 08. 08. 08.	83. 17. 17. 17. 17. 17. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	85.8228.88	88.8.22.8.4.4	48.53.38	1.00 1.30 1.05 1.05 1.05	1.08 	428884383	1. 20 1. 86 1. 53 1. 24 1. 17	1.28 1.38 1.30 1.30 1.20	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1.17.0688	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1.18 1.18 1.18 1.18
West North Central.	.43	.44	.44	. 44	.46	4.	.47	.60	92.	92.	.84	98.	. 90	. 96	1.00	1.02	1.08	1.20	1,31	1.36	1.20
Dolaware Varyland Virginia West Virginia North Carolina Georgia Florida	25.544.4.58.13.	88444885	001788 84 85 87 87 87 88 88 88 88 88 88 88 88 88 88	88478888	8248888	85.55.55.55.55.55.55.55.55.55.55.55.55.5	848888414	40.1 40.2 40.2 40.2 40.2 40.2 40.2 40.2 40.2	26. 1.00. 1.00. 1.01. 1.01. 1.01.	96.1. 97. 97. 88. 1.96.	1. 08 1. 08 1. 08 1. 08 1. 08 1. 09 1. 09 1. 09	40.1. 40.1. 1.06.1. 88.1. 88.1. 88.1.	1.06 1.09 1.09 1.09 1.09 1.09 1.09	41.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	0.1. 0.1. 0.1. 0.1. 0.1. 0.1. 0.1. 0.1.	1.16 1.16 1.34 1.09 1.08 1.08	1. 1. 28 1. 1. 28 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		1.1.82 1.1.66 1.528 88.2.1.1.65 88.2.1.1.65	1. 36 1. 36 1. 38 1. 38 1. 38 1. 38	.1.3. 3.1.3 3.1.3 3.1.3 3.1.3 3.1.3
South Atlantic	. 52	. 58	. 56	. 54	.53	. 51	.40	22	68.	.84	88.	. 91	. 97	1.06	1.06	1.08	1.07	1.13	1.25	1.36	
•						_	I	1				1	-		1						

Kentucky Tannessee Alabama Mississipul	2228 3	2888	23388	75 25 26 26 26 26 26 26 26 26 26 26 26 26 26	43388 3	527	8848	. 89 1. 69 1. 69	1.09	97 1.75	1.05	2.813	1.02	1.11	1.02	1.00 1.12 2.15 2.15	2.06 2.06	2,12	1.26 1.23 2,43	1. 39 1. 52 1. 31 2. 66	1.18
	2 2 2 2 3	8884	22.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	2222	8552	2 2 2 3 4	58.8.4	1.91	8222				2 4 2 5	22888			1888	1.39	#222#		(1) 40 1.04 1.04 1.04
	. 52	.54	.61	.55	. 55	. 58	.61	.74	88.	8.	.92	8.	8.	98.	88.	8.	.93	1.07	1.19	1.21	
	48248323	24864847	2454444268 24544468	883345E88	. 52 . 56 . 56 . 37 . 68 . 68	44.85.88.88.88.88.88.88.88.88.88.88.88.88.	62 84 62 64 55 4 5 6 64 64 65 64 65 65 65 65 65 65 65 65 65 65 65 65 65	. 98 . 98 . 81 . 17 . 119 . 84	1.19 .92 .93 .83 .83 .96	1.20 1.20 1.06 1.06 1.13 1.13	1.28 1.10 1.10 1.28 1.128	1. 24 1. 10 1. 10 1. 23 1. 23 1. 23 1. 24	1.30 1.30 1.19 1.32 1.37	1.34 1.34 1.29 1.29 1.38	1. 43 1. 39 1. 39 1. 38 1. 32 1. 32	71.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	111.1. 98. 4. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	11.28 11.32 11.32 14.1 88	1.1.36 1.44 1.1.47 1.26 1.27 1.21	1.1.1.1.56 42.1.1.56 1.1.52 1.1.52 1.1.52 1.1.52 1.1.52	111111111111111111111111111111111111111
니	.47	. 49	8	8	.54	. 50	8	28.	. 94	. 97	1.06	1.09	1.12	1. 22	1. 22	1. 22	1.26	1.24	1. 44	1.65	1.44
	\$ 4.8	848	882	88.68	23.2	888	92.59	1.01	0.1. 88. 88.	1.15	1.1	888	1.08 9.89	1.09	1.010	1.18 1.07 1.05	1.15	1.21	1.35 1.05 1.13	1.38	1.15 (i) .84
H	. 56	. 59	. 50	. 59	.62	19.	99.	.87	0 6 .	. 96	.95	.92	.95	1.01	1.04	1.08	1.06	1.06	1.16	1.26	
<u> </u>	18	8.	.57	. 57	88	.57	86.	. 79	26	8.	1,01	3.03	1.07	1.12	1.15	1.18	1.19	1.28	1.42	1. 50	2 1. 22

Bursan of Agricultural Economics. These data are derived from the figures shown in the preceding table and the indexes of farm real estate values, which are estimated annually by the Bursan. ¹ Figures not yet computed.
² Preliminary; based on figures for 35 States.

Table 480.—Bankruptcies among farmers, number and percentage of total, by geographic divisions, fiscal years 1910-34

•									
New E	ngland							South 2	Atlantic
Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies
123 148 81 88 112 143 152 125 104 72 91 146 109 145 105 105 105 105 105 105 105 10	Percent 6.04 4 4 7.4 0.0 4.8 3 5.3 8 3 4.1 1 8.2 2 9.9 5.5 2 6.0 3.3 5.2 8 3.4 1 1 3.6 2 8 3.4 1 1 3.6 2 8 3.4 1 1 3.6 2 8 3.4 1 1 3.6 2 8 3.6 4 1 1 3.6 2 8 3.6 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Number 52 48 48 68 68 68 69 90 88 130 97 77 89 61 717 148 171 190 224 2274 2274 2274 2270 305 3372 514 420	Percent 1.86 1.67 1.80 2.24 2.23 2.61 2.26 2.3 2.66 8.3 2.66 8.3 2.66 8.3 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3	Number 98 89 98 143 94 1446 1442 1126 62 247 569 684 7760 9873 1,025 1,580 2,020 1,384	Percent 3 2 2 3 4 4 2 7 5 0 8 2 8 8 2 8 8 8 6 8 6 6 2 2 2 3 3 6 6 9 0 0 11.5 12.4 11.3 9 2 9 3 8 8 0 0 8 1 1 0 7 13.3 9 0 0	Number 287 1197 2199 2389 2399 2376 3245 213 324 1,005 27,7853 24 1,729 1,729 1,1257 1,009 1,277 983	Percent 15.9 11.0 14.2 13.7 14.6 13.8 12.6 13.6 11.4 8.1 120.6 40.3 46.1 42.5 39.2 21.2 21.2 21.9 20.3 8 22.0	Number 63 78 63 79 85 100 1777 8869 407 410 221 1685 1,037 747 585 515 421 455 661 669	Percent 4.5 5.1 4.7 4.5 4.5 5.5 5.5 9.8 8.12.2 2.13.8 10.17.0 16.9 17.6 9.9 7.0 9.9 7.9 5.8 7.4 7.4 9.7
		West Cer	South itral	Mou	ntain	Pa	eific	United	States
Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Per- cent of total bank- rupt- cies	Bank- rupt- cies among farmers	Percent of total bank-rupt-cies
38 655 91 83 100 127 164 179 126 108 100 201 420 483 517 579 615 521 336 338	Percent 2.83 5.71 4.24 6.88 6.89 6.89 6.7 7 9.7 5.9 6.9 8.3 6.8 8.3 6.8 8.3 6.8 8.3 6.8 8.3 6.8 8.3 6.9 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9.7 9	Number 66 72 62 89 89 81 11 186 164 95 124 264 539 788 650 764 484 375 282 308 371 329	Percent 8.3 8.2 7.0 7.4 6.8 9.3 9.4 12.2 15.1 10.0 15.7 20.4 22.3 23.6 20.7 19.5 17.3 14.7 10.5 10.2 9.7	Number 35 35 55 66 118 159 193 105 102 104 177 419 730 1,040 1,071 1,142 20 335 201 215 167 131	Percent 7.1 7.0 9.1 8.9 15.7 19.2 17.0 11.4 11.9 16.2 23.8 24.3 34.3 46.3 41.8 42.7 31.8 24.0 20.9 17.1 13.3 15.2 13.1	Number 87 40 40 40 115 115 156 137 100 115 156 137 100 56 137 192 424 540 589 5111 463 453 387 326 255 311 309 200	Percent 9.0 4.2 4.6 5.9 6.1 7.3 6.7 5.8 5.9 7.1 1.0 1.0 8.5 6.1 4.4 5.0 3.8	Number 849 679 837 942 1,045 1,246 1,632 1,907 1,363 5,947 7,872 7,872 7,872 4,939 4,64 4,023 4,849 4,716	Percent 4.8 5.4 5.6 6.9 7.0 6.9 7.1 8.4 17.4 18.7 17.5 18.1 10.6 7 7 7 7 8 8.0
	Bank-rupt- cies among farmers Number 123 835 148 88 8112 143 152 1143 169 146 196 160 160 161 161 161 161 161 161 161 16	Same Percent 123 6.0	Bank-rupt-cies among farmers	Bank-rupt-cies Aumber Percent of total sank-rupt-cies South Central	Rew England	Rew England	New England	New England Atlantic Central Central	New England

Bureau of Agricultural Economics; compiled from reports of the Attorney General.

Table 481.—Farm-mortgage debt: Estimated total for all farms, by States, Jan. 1, selected years from 1910 to 1930

State and division	1910 ¹	1920	1925	1928	1930 2
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut	1,000 dollars 13, 210 5, 870 15, 850 22, 890 2, 210 16, 080	1,007 dollars 20, 890 8, 600 29, 040 34, 180 2, 350 25, 800	1,000 dollars 26, 097 7, 732 28, 001 32, 207 2, 435 27, 276	1,000 dollars 25, 252 7, 780 28, 322 31, 262 2, 455 27, 423	1,000 dollars 24, 825 9, 901 33, 102 42, 556 3, 854 30, 514
New England	76, 110	120, 860	123, 748	122, 494	144, 74
New York New Jersey Pennsylvania	154, 190 31, 720 95, 620	224, 060 39, 500 133, 080	226, 776 41, 741 120, 281	219, 812 40, 370 116, 432	247, 633 56, 884 174, 037
Middle Atlantic	281, 530	396, 640	388, 798	376, 614	478, 55
Ohio	113, 320 111, 280 266, 780 109, 970 193, 600	210, 760 206, 600 502, 860 215, 740 455, 470	214, 409 264, 483 650, 353 228, 089 504, 553	222, 101 277, 269 685, 365 235, 399 529, 992	259, 630 266, 989 631, 260 230, 377 502, 549
East North Central	794, 950	1, 591, 420	1, 861, 887	1, 950, 126	1, 890, 81
Minnesota. Iowa Missouri North Dakota. South Dakota. Nebraska. Kansas	146, 160 431, 500 202, 650 101, 450 88, 700 161, 850 163, 770	455, 540 1, 098, 970 385, 790 267, 780 278, 880 416, 860 295, 870	553, 784 1, 424, 352 449, 022 226, 714 372, 004 617, 930 482, 596	558, 458 1, 402, 178 447, 351 236, 250 370, 946 599, 418 447, 586	530, 024 1, 098, 610 428, 227 204, 598 295, 724 560, 973 487, 125
West North Central	1, 296, 080	3, 199, 690	4, 126, 402	4, 056, 187	3, 605, 280
Delaware Maryland District of Columbia Virginia West Virginia North Carolina South Carolina Georgia Florida	6, 500 29, 580 290 24, 000 8, 210 18, 960 20, 530 28, 800 4, 380	8, 990 49, 230 340 61, 600 15, 960 56, 580 51, 220 83, 840 19, 710	8, 695 50, 422 304 79, 709 18, 570 78, 606 68, 735 109, 060 25, 508	9, 469 54, 980 354 87, 117 20, 155 90, 866 77, 214 123, 305 28, 436	11, 84 64, 82; 64; 88, 86; 24, 28; 104, 97; 67, 50; 100, 84; 45, 14;
South Atlantic	141, 250	347, 470	439, 609	491, 896	503, 92
Kentucky Tennessee Alabama Mississippi	40, 510 26, 850 24, 880 31, 320	104, 100 83, 130 55, 450 77, 420	94, 549 85, 857 66, 410 109, 562	103, 798 96, 711 69, 488 111, 500	97, 66 87, 31 83, 76 96, 86
East South Central	123, 560	320, 100	356, 378	381, 497	365, 60
Arkansas Louisiana Oklahoma Texas	22, 200 19, 090 77, 680 172, 240	76, 870 41, 250 188, 890 396, 670	97, 809 57, 910 218, 963 485, 587	103, 464 61, 760 228, 513 507, 515	85, 577 81, 379 214, 031 543, 95
West South Central	291, 210	703, 680	860, 269	901, 252	904, 94
Montana Idaho. Wyoming Colorado New Mexico Arizona Utah Newada.	19, 620 24, 270 7, 820 41, 800 4, 810 4, 880 7, 170 3, 340	154, 940 115, 350 32, 970 138, 400 23, 670 31, 790 35, 550 11, 880	116, 616 107, 355 43, 364 153, 727 28, 784 29, 545 39, 152 15, 244	104, 862 100, 033 40, 922 144, 464 26, 900 29, 006 36, 367 13, 997	129, 20(106, 908 42, 948 146, 465 30, 726 28, 744 46, 273 14, 735
Mountain	113, 710	544, 550	533, 787	496, 551	546, 00
Washington Oregon California	45, 040 34, 950 22, 080	116, 740 91, 090 425, 460	121, 371 105, 503 442, 868	120, 523 110, 875 460, 511	131, 29 116, 80 548, 42
Pacific	202, 070	633, 290	669,742	691, 909	796, 52
United States	3, 320, 470	7, 857, 700	9, 360, 620	9, 468, 526	9, 241, 39

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Revised.
 Preliminary. The figures for some States are subject to considerable revision.

Table 482.—Agricultural loans from selected Federal and other agencies, outstanding at close of year, 1917-34

		Farm-mo	ortgage lo	ans by-		Federa mediate		Pro-	Re-	
End of year	Fed-	Land bank	Joint- stock	Loans of 39 life in-	Mem-	Coop-	Finan-	duc- tion credit	gional agricul- tural credit	Emer- gency crop loan
	eral land banks ¹	com- mis- sioner ¹	land banks 1	surance	ber banks ³	erative associ- ation 1	eing agen- cies ¹	associ- ations	corpor- ations 1	offices 1
1917	Million dollars 30	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars	Million dollars
1917 1918 1919 1920	156 294 350		8 60 78							
1920 1921 1922 1923	433 639		85 219 393	1, 335			9			
1924 1925 1926	928 1,006		446 546 632	1, 452 1, 523	489	44 54 53	19 26 40			
1927 1928 1929	1, 156 1, 194 1, 198		667 605 585	1, 588 1, 618 1, 606 1, 591	478 414 388	32 36 26	44 45 50			1 1 7
1930 1931 1932	1, 188 1, 163 1, 117		553 530 409	1,554 1,512 1,402	387 359 356	64 45 10	66 75 83		24	8 60 89
1933 1934	1, 214 1, 896	71 617	354	1, 234 950	318 262	15 34	61 56	(4) 61	145 87	5 110

¹ Farm Credit Administration. Beginning 1928, loans from joint-stock land banks in receivership not included.

Bureau of Agricultural Economics.

Table 483.—Selected interest and discount rates on current loans, and bond yields, 1917-34

Year	12 Feder- al land banks' rates to borrow- ers ¹	mediat banks	ral inter- e credit loan and it rates ¹	Yield on Federal land bank bonds	Rates on commer- cial paper (4-6 months average) ²	Federal Reserve bank discount rates, New York ²
1917 1918 1919 1920 1921 1922 1923 1924 1925 1925 1925 1926 1927 1928 1929 1929 1930 1931 1931	5.50 5.88 5.71 5.50 5.46 5.30 5.05 5.32 5.63 5.63		Average 5.50 5.33 5.04 4.90 4.73 4.91 5.61 4.64 4.08 4.23 3.10 2.29	Average 4.33 4.39 4.29 5.14 5.11 4.50 4.39 4.55 4.34 4.27 4.08 4.26 4.78 4.78 4.78 4.78 3.68	Average 4.74 5.86 5.42 7.46 6.56 4.48 5.01 3.87 4.03 4.10 4.85 5.84 2.68 2.68 2.78 1.72 1.01	Range 4 - 41/4 - 41/4 - 41/4 - 7 - 41/2 - 41/4 - 41/4 - 7 - 41/4

¹ Farm Credit Administration. Figures for the Federal land banks are rates to borrowers through national farm loan associations. Each Federal land bank district or Federal intermediate credit bank district is given equal weight in computing the respective rates for these 2 types of credit, and the rate for each district is weighted by the number of days in force. Beginning May 1933, rates payable by horrowers on new Federal land bank loans were 2 percent less than the contract rate cited, for a period of 5 years, as provided by the Emergency Farm Mortgage Act.

¹ Federal Reserve Board.

Bureau of Agricultural Economics.

² Association of Life Insurance Presidents. Reports cover operations of 39 companies representing 82 percent of the admitted assets of all legal reserve life companies in the United States.

³ Federal Reserve Board.

⁴ Less than \$27,000

⁵ Includes \$32,000,000 drought loans.

Table 484.—Studies of farm family living

Data from 1,663 families in 10 States for one year in the period 1928-341

		ļ	Fami-	Aver-	Aver-	Average ices fr	Average value of goods and serv- ices furnished by the farm	goods an by the	id serv- farm	Аvеп	же ехрег	ditures for g purchased	for goods ased	Average expenditures for goods and services purchased	rices	Average savings	age 1gs
State, county, and locality	Key:	rear of study	lies stud- ied	age size of family	value of family living	Food	Hous-	Other	Total	Food	Cloth- ing	House- hold opera- tion ³	Trans- por- tation	Other	Total	Life insur- ance	Other
New York: Chautauqua, Niagara, Yatos Ohio: scattered counties. Minois: scattered counties.	1S IR IR	1928-29 1933 1933-34	Number 240 70 167	ersons 3.4 4.1 83.7	Dollars (4) (4) 1, 385	Dollars (*) 6 143 9 309	Dollars (4) (4) 16 229	Dollars (+) 6 14 9 20	Dollars (*) (*) (*) 558	Dollars 317 144 147	Dollars 183 87 101	Dollars 109 99 100	Dollars (6) (5) 11 82	Dollars 318 233 249	Dollars 927 563 679	Dollars (*) (7) 113	Dollars (4) 7 81 35
esots: southeastern countles northern countles	2R 1R	1933 1933–34	27.	8 8 8 70	979 757	12 166 12 155	12 138	13 35 13 35	339	8081	88	32	11 50	175	576 417	33	7 64 7 57
Jows: east-central and north-central sections. Nebreaks: scattered counties. South Carolina: 6 counties.	HHH	1933 1933 1932-33	17 164 15 46	€44, 073	£ 808	6 13 202 6 149 9 284	(4) 14 159 10 161	(3) (3) (3) (3)	(*) 331 473	25. 15. 29.	283	12 88 42	11 88 53 (3)	250 125 204	600 491 442	(7) 34	18 7 86 9
tis: ithern Pledmont section Do	13 13 13 13	1931 1932	17 98 17 98	4.0	18 874	6 375 6 296	16 99 16 100	6 57	531 436	78	38	33 %	и 15	130	313	19 30 19 26	ච ච
Oktanoma: Analia, Angusher, Logan gan Washington: scattored counties	18 18	1932-33 1933	562	£.2	E E	£ 289	<u>ච</u>	€,	ව ව	139	88	88	11 75	109 298	424	<u> </u>	7 186 7 126

I This table is a supplement to table 475, 1933 Yearbook, and to table 484, 1934 Yearbook, and includes data from recent studies and other studies not available at the time of The numbers indicate the agency which obtained the data, and the letters indicate the method used in obtaining the data, as follows: 1, State university, agricultural conservations tatation; 2, State university in cooperation with Bureau of Agricultural Economics, U. S. Department of Agriculture; S, schedule method; R, record or account-book method.

* Includes expenditures for tuel, light, household supplies, and hired help; in some cases includes also those for laundry done outside, telephone, postage, express and freight, insurance on furniture, dry-cleaning and pressing, moving charges, interest on family debts, ice, and water.

* Not included in this report.

* Not friended in this report.

* Not free page actions are a first furnished from the first page.

6 Not given separately.

6 Evaluated at farm prices.

7 Life insurance included with other savings.

14 Includes I family not operating a farm.

18 Evaluated at 10 percent of estimated value of house.

18 Schedules from identical families for consecutive years.

18 Includes life insurance but no other savings.

19 Includes health insurance.

14 Evaluated at 9 percent of estimated value of house.

8 Size of family in adult-equivalent units.

9 Evaluated at retail prices.
10 Evaluated at 10 percent of estimated value of house minus each expenditures for housing.
11 Automobile ouly.

Bureau of Home Economics

Table 485.—Preliminary summary of results of the 1934 cotton production-adjustment program of the Agricultural Adjustment Administration, by States [Statement as of Jan 11 1935]

			[pratemer	It as of Ja	ш. 11, 19	ა ა ე			
State	Con- tracts	Ad- justed average base acreage	Ad- justed average pro- duction	Rented acres	Average yield on adjusted contracts	Farm allot- ments	Esti- mated rental pay- ments	Esti- mated parity pay- ments	Esti- mated total pay- ments
Alabama Arizona Arkansas California Florida Georgia Kansas Kentucky Louisiana Mississippi Missouri New Mexico North Carolina Oklahoma South Carolina Tennessee Texas Virginia	1, 845 91, 645 1, 865 6, 512 107, 054 292 56, 343 95, 577 8, 792 2, 156 70, 681 89, 113 71, 526 39, 182 236, 391 4, 541	3, 282, 610 1, 153, 025 3, 382, 045 161, 012 109, 338 3, 108, 366 13, 754 1, 877, 342 3, 883, 099 379, 819 120, 234 1, 311, 106 3, 300, 561 1, 879, 917 1, 022, 153 14, 191, 396 60, 640	55, 011 651, 408 77, 413 16, 005 572, 040 3, 757 360, 962 110, 971 43, 292 327, 492 487, 276 402, 739 218, 717 2, 041, 940 16, 727	1, 313, 785 61, 760 43, 280 1, 199, 524 727, 831 1, 471, 131 145, 712 44, 175 501, 117 1, 277, 140 712, 585 392, 237 5, 333, 019 23, 472	348 193 481 146 184 142 273 192 292 360 250 214 214 214 216	234, 663 22, 004 260, 563 30, 965 6, 402 228, 816. 1, 503 144, 385 294, 825 44, 388 17, 317 130, 997 194, 910 161, 096 87, 487 816, 776 6, 691	765, 428 8, 874, 618 1, 039, 730 221, 161 7, 724, 935 1, 590 50, 145 4, 891, 024 9, 783, 021 1, 489, 177 556, 605 4, 384, 774 6, 615, 585 5, 337, 262 2, 937, 855 26, 878, 416 226, 740	220, 040 2, 605, 630 309, 650 64, 020 2, 288, 160 15, 030 1, 443, 850 2, 948, 250 443, 880 173, 170 1, 309, 970 1, 610, 960 874, 877 8, 167, 766	11, 480, 248 1, 349, 380 285, 181 10, 013, 095 2, 050 65, 175 6, 334, 874 12, 731, 271 1, 933, 057 729, 775 5, 694, 744 8, 564, 685 6, 948, 222 3, 812, 725 35, 046, 125 293, 650
Total	1, 009, 583	38,242,732	6, 709, 585	14,603,282	175	2, 683, 834	89, 848, 031	26, 838, 340	116,686,371

Table 486.—State quotas of tax-exempt cotton under provisions of the Bankhead Act, 1934, administered by the Agricultural Adjustment Administration

			7. 20 0000 000 1	1100 0000			, o
	5-year av duction	erage pro- 1, 1928-32	Allotment in	Allot- ment in 478-	Official esti-	Allot- ments	Produc-
State	478-pound net-weigh t bales		terms of net lint	pound net-weight bales	mated produc- tion, 1934	in excess of pro- duction	excess of allot- ment
Virginia North Carolina South Carolina Georgia Florida	856, 000 1, 242, 000 35, 000	358, 857, 000 408, 763, 000 593, 688, 000	252, 715, 200 287, 856, 000 418, 084, 800 11, 798, 400	528, 693 602, 209 874, 654 24, 683	650, 000 695, 000 995, 000	Bales	92, 791 120, 346
Illinois Kansas Kentucky Tennessee Alabama Mississippi Louisiana Texas Oklahoma	478, 000 1, 255, 000 1, 559, 000 745, 000 4, 580, 000 1, 109, 000	228, 827, 000 600, 290, 000 745, 781, 000 356, 376, 000 2, 197, 538, 000 531, 228, 000	3,057,400 161,145,600 422,731,200 525,192,000 250,963,200 1,547,539,200 374,097,600	378 6, 396 337, 125 884, 375 1, 098, 728 525, 028 3, 237, 530 782, 631	412, 000 965, 000 1, 145, 000 488, 000 2, 395, 000 325, 000	37, 028 842, 530 457, 631	9, 539 74, 875 80, 625 46, 272
Arkansas New Mexico Arizona	1, 351, 000 90, 000 128, 000	43, 234, 000	30, 446, 400	63, 695	92,000	77, 669	28, 305
Total excluding California and Missouri California 2 Missouri 2	14, 236, 600	6, 818, 095, 000	100, 000, 000 100, 000, 000	10, 041, 841 209, 205 209, 205	9, 231, 000 255, 000 245, 000		45, 795 35, 795
Grand total			³ 5, 000, 000, 000	310, 460, 251	9, 731, 000	41, 414, 858	4 669, 607

Agricultural Adjustment Administration.

Data on contracts as approved by State boards of review; compiled from forms No. 13-A. Information on Data on contracts as approved by State Doards of review; complied from forms No. 13-A. Information on payments estimated from contract data; rental at the rate of 3½ cents per pound on lint which would have been produced on rented land, parity payment at the rate of 1 cent per pound on 40 percent of average base production (approximately the portion grown for domestic consumption). All totals shown may be reduced to some extent by contract cancellations.

¹ Including 16,000 bales of Pima cotton which is tax free when at least 1½ inches in length and, therefore, requires no allotment.

2 Section 5 (a) of the Bankbead Cotton Act of 1934 provides "That no State shall receive an allotment of less than 200,000 bales of cotton if in any 1 year of 5 years prior to this date the production of the State equaled 250,000 bales." This provision was found to apply to California and Missouri only.

3 In the Bankbead Cotton Act of 1934 the term "bale" means 500 pounds of lint cotton. Since ordinarily bales contain an average of 478 pounds, allotments are shown as converted to 478-pound net-weight bales.

4 Producers having excess tax-exemption certificates were able to utilize them extensively in some sections as a form of crop insurance, by selling them to producers whose production was in excess of their allotments. Those certificates not so transferred could be held and exchanged for 1935 tax-exemption certificates in addition to the normal allotments of the owners.

Arricultural Addinatment Administration.

Agricultural Adjustment Administration.

Table 487.—Tobacco adjustment programs under the Agricultural Adjustment Administration, by kinds of tobacco and by States, 1934

Kind of tobacco and State	Total contracts	Total base acreage	Total base production	Average base acreage per contract	Average reduction from base ¹
Flue-cured, types 11-14: Florida	Number 1, 038 12, 381 73, 531 13, 291 11, 684	Acres 6, 023 75, 870 695, 852 99, 380 94, 328	1,000 lbs. 4,534 59,821 528,658 78,542 59,747	Acres 5.80 6.13 9.46 7.48 8.07	Percent 29 29 28 29 26
Total	111, 925	971, 453	731, 302	8.68	28
Fire-cured, types 21-24: Kentucky	10, 478 6, 963 6, 308 23, 749	65, 136 65, 007 28, 302 158, 445	46, 804 50, 968 20, 432	6. 22 9. 34 4. 49 6. 67	25 25 25 25
	23, 749	158, 445	118, 204	6.67	20
Burley, type 31: Alabama. Arkansas. Indiana. Kansas Kentucky Missouri North Carolina. Ohio Tennessee. Virginia. West Virginia.	18 16 2, 995 88 59, 832 1, 059 3, 969 5, 329 28, 449 5, 793 1, 876	205 60 10, 110 480 305, 590 7, 310 15, 860 67, 435 10, 720 5, 210	153 28 7, 645 425 228, 199 7, 092 5, 950 11, 535 53, 737 10, 144 3, 044	11. 40 3. 58 3. 37 5. 46 5. 11 6. 91 1. 84 2. 98 2. 37 1. 85 2. 78	49 41 42 41 40 40 31 42 38 35 45
Total	109, 424	430, 290	327, 955	3.93	40
Maryland, type 32	702	7, 139	4, 578	10.17	25
Dark air-cured, types 35–37: Kentucky Tennessee Virginia		40, 676 2, 746 1, 102	33, 868 2, 100 819	4. 69 2. 66 2. 93	30 30 30
Total	10,078	44, 524	36, 787	4.42	30
Cigar-leaf: 2 Pennsylvania New York Ohio Indiana. Connecticut Massachusetts. Vermont New Hampshire. Wisconsin Minnesota. Illinois Florida Georgia.	375 5,067 34 2,158 1,049 25 27 8,558 662 12 122	31, 188 1, 484 34, 906 133 17, 352 7, 346 132 124 38, 190 1, 869 1, 994 748	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	6. 64 3. 96 6. 89 3. 91 8. 04 7. 00 5. 28 4. 59 4. 46 2. 82 3. 18 16. 34 17. 35	65 96 75 67 77 99 99 91 81 91 22
Total	22, 828	135, 502	(3)	5.94	72
Puerto Rican	10, 400	53, 555	(8)	5. 15	32
		1,800,908		6, 23	34

¹ Tobacco contracts provide allotments of production as well as acreage, except in the case of cigar-leaf tobacco. This column shows percentage reduction of allotted acreage from base acreage. Since some growers did not grow their full allotted acreage, the total harvested acreage of growers under contract was below the total acreage allotted. The Burley contract permitted choice of a reduction of either 33½ or 50 percent; binder and filler cigar-leaf contracts permitted choice of a reduction of 33½ or 50 percent or 100 percent. For fine-cured tobacco, an administrative ruling permitted choice of a reduction of 20 percent in lieu of the 30 percent provided in the contract.
² Includes all domestic types of cigar-leaf tobacco except types 45 and 61.
³ Base production not established under cigar-leaf tobacco contracts.

Agricultural Adjustment Administration.
For production in 1934, see statistical tables in earlier portion of this Yearbook, under "Tobacco."

Table 488.—Tobacco, 1934 crop: Proportion of sales to Feb. 1, 1935, covered by tax-payment warrants and tax paid in cash under Kerr-Smith Act

Class and type	Type No.	Total sales	Percentage of sales for which tax was paid with warrants	Percentage of sales for which tax was paid in cash
Flue-cured: Old belt Eastern North Carolina South Carolina belt. Georgia and Florida	11 12 13 14	1,000 pounds 192,267 226,263 102,856 35,001	Percent 96. 1 98. 9 99. 2 99. 5	Percent 3.9 1.1 .8 .5
Total	11-14	556, 387	98. 0	2. 0
Fire-cured: Virginia	21 22 23 24	12, 422 11, 715 11, 088 2, 155	87. 0 81. 7 82. 2 65. 6	13. 0 18. 3 17. 8 34. 4
Total	21-24	37, 380	82. 7	17. 3
Burley	31	212,822	79.7	20. 3
Dark air-cured: One Sucker	35 36 35–36	10, 587 11, 525 22, 112	52. 5 84. 2 69. 0	47. 5 15. 8 31. 0
Lutat	00-00	22, 112	09. 0	91.0

Agricultural Adjustment Administration.

Maryland type 32, Virginia sun-cured type 37, and all cigar-leaf types were specifically exempted from the tax on the 1934 crop under the provisions of the Kerr-Smith Act.

Table 489.—Tobacco referenda: Growers' vote on Kerr-Smith Act, December 1934

			,	1004
Class and type	Type No.	Acreage customarily engaged in production of tobacco	Percentage of land which was voted	Percentage of voted land which was voted in favor of tax for 1935
FLUE-CURED		Acres	Percent	Percent
Virginia North Carolina	11 11	89, 400 255, 000	94. 7 97. 5	98. 5 99. 0
Total old belt	11	344, 400	96.8	98. 9
Eastern North Carolina belt	12	336, 300	98. 2	99. 3
North Carolina South Carolina	13 13	63, 600 101, 200	98. 7 91. 5	99. 7 99. 1
Total South Carolina belt	13	164, 800	94. 3	99. 8
Georgia Florida	14 14	77, 900 5, 700	91. 0 76. 4	98. 4 97. 8
Total Georgia and Florida belt	14	83,600	90. 1	98. 4
Total flue-cured	11-14	929, 100	96.3	99. 1
FIRE-CUBED Virginia	21	32, 200	91. 7	94.7
Kentucky Tennessee	22 22	43, 800 68, 200	82. 1 76. 2	93. 9
Total Clarksville and Hopkinsville	22	112, 000	78. 5	94. 1
Kentucky	23 23	33, 700 5, 700	78. 9 59. 6	91. 6 51. 2
Total Paducah	23	39, 400	76. 1	87.0
Henderson Stemming (Kentucky)	24	4,800	57. 1	79.8
Total fire-cured	21-24	188, 400	79. 7	92. 6
BURLEY Ohio	31 31 31 31 31 31 31 31	18, 300 11, 600 8, 000 700 11, 100 6, 000 8, 600 352, 100 77, 400	87. 0 87. 0 90. 6 97. 3 93. 5 90. 5 89. 6 91. 0 88. 0	93. 1 90. 0 92. 2 96. 7 93. 0 96. 9 96. 6
Total Burley	31	493, 800	90.3	95.7
DARK AIR-CURED				
IndianaKentucky	35 35	1, 300 19, 600	46. 2 89. 6	84, 0 92, 2
Tennessee	35	3,300	95. 3	82, 0
Total One Sucker	35	24, 200	87. 6	90.6
Green River (Kentucky)	36	30, 600	82, 0	94.6
Virginia sun-cured	37	4, 200	71.5	89. 0
Total dark air-cured	35–37	59, 000	83.8	92. 5
Total above types		1, 670, 300	92. 2	97.3

Agricultural Adjustment Administration.

All growers having an interest in the 1934 crop of tobacco of the above types were eligible to vote upon the question, "Do you favor a tax on the sale of......tobacco for the crop year, peginning May 1, 1935, as provided in the Ker-Smith Act?" Growers were required to state their 1934 acreage and votes were tabulated according to the acreage voted. If any person having an interest in the 1934 crop voted "No", the entire acreage in which that person had an interest was counted as "not favoring the tax", regardless of how other persons having an interest in the same land voted. Referenda for Maryland type 32 and cigareaf types had not been conducted at the time this table was prepared.

Table 490.—Preliminary summary of results of wheat acreage-reduction campaign for 1934 and 1935 of the Agricultural Adjustment Administration, by States [Revised to Dec 1, 1934]

		[160413	ed to Dec.	1, 1001]			
		Acreage Productio			uction	of adju	ed amount istment ments 4
State	Official seeded acreage, average 1930–32 i	Base acreage of contract signers, average 1930–32 2	Percent- age of official acreage	Official production, average 1928-321	Base production of contract signers, average 1928–32 3	1933	1934
Alabama	Acres 4,000	Acres	Percent	Bushels 34, 400	Bushels	Dollars	Dollars
Arizons	28, 300	6, 152	22	602, 400	140, 528	21,000	22,000
Arkansas	30,000	1 1,786	6	247, 200	17,811	3,000	3,000
California	677 000	439, 102	65	11,046,400	8, 116, 619	1, 196, 000	1, 280, 000
Colorado	1, 754, 700	1, 457, 239	83	17, 111, 200	14, 240, 773	2, 142, 000	2, 227, 000
Delaware	94, 300	36, 730	39	1,799,600	710, 759	110,000	111,000
Georgia	52,000	3, 780 978, 019	7 86	510, 400	54,878	8,000	9,000
IdahoIllinois	1, 142, 000	998, 918	51	27,028,400	22,512,449	3,399,000	3, 531, 000
Indiana	1, 652, 300	746, 759	45	32, 532, 400 26, 522, 200	17, 226, 250 12, 761, 516	2, 492, 000 1, 882, 000	2, 698, 000 1, 999, 000
Iowa	369, 300	140, 090	38	7, 445, 200	3, 224, 668	431,000	504,000
Kansas	13, 516, 000	12, 086, 527	89	177, 431, 200	157, 812, 906	24, 398, 000	24, 759, 000
Kentucky	258, 700	138, 338	53	3,002,000	1,723,470	249,000	271,000
Maine Maryland	2,300 439,300	289, 904	66	51, 400 8, 647, 800			
Michigan	719, 000	245, 022	34	15, 522, 600	5, 306, 718 5, 631, 944	796, 000 828, 000	831,000
Michigan Minnesota	1, 367, 700	844, 519	62	20, 946, 200	12, 463, 549	1,850,000	882,000 1,947,000
Mississippi				2,600			L
Missouri		696, 075	45	20, 362, 400	10,810,269	1, 534, 000	1,690,000
Montana	4, 445, 700	4, 316, 828	94	45, 167, 400 56, 537, 600	41,922,669	6, 331, 000	6,597,000
Nebraska Nevada		2, 639, 602	72	56, 537, 600	40,082,362	5, 944, 000	6, 205, 000
New Jersey	15, 000 51, 000	8, 514 3, 562	57 7	377,600	206, 677	30, 000 11, 000	32,000
New Mexico	479, 700	386, 571	81	1, 165, 200 4, 148, 000	78, 450 3, 295, 583	497, 000	12,000 520,000
New York	219, 700	12, 365	6	4,411,200	295,700	44,000	46,000
North Carolina	333, 700	21, 755	7	3, 653, 400	351, 257	53,000 14,677,000	55,000
North Dakota	10, 368, 000	9, 919, 175	94	102, 903, 000	95, 624, 651	14,677,000	14, 974, 000
Ohio Oklahoma		613, 009	35	30, 479, 800	11, 206, 137	1,718,000	1,754,000
Oregon	4, 532, 700 1, 027, 000	3, 524, 741 845, 937	78 82	55, 145, 200 21, 205, 000	44, 402, 802 17, 274, 962	6,840,000 2,662,000	6,956,000
Oregon Pennsylvania	954, 700	89, 435	9	17, 387, 200	1,670,918	254,000	2,734,000 262,000
South Carolina	57,000			575, 200 37, 631, 800	2,010,020	22,000	202,000
South Dakota	3, 895, 300	3, 511, 345	90	37, 631, 800	33, 559, 850	5, 127, 000	5, 266, 000
Tennessee	248, 700	70, 904	29	2,918,200	876, 394	128,000	137,000
TexasUtah	4, 346, 300 272, 300	3, 674, 186 206, 420	85 76	41, 082, 600 5, 553, 800	35, 062, 679	5, 422, 000	5, 500, 000
Vermont	600	200, 420	10	15,000	4, 396, 105	660, 000	687,000
Virginia	600 700	210, 241	35	9, 220, 400	3, 639, 109	539,000	570,000
Washington West Virginia Wisconsin	2, 471, 300	1,937,500	78	42, 882, 200	37, 255, 007	5, 802, 000	5,864,000
West Virginia	113,000	32,058	28	1,642,600	507, 766	76,000	79,000
Wyoming	100, 700	13, 726	14	1,869,000	264, 935	39,000	41,000
Wyoming Not allocated to indi-	360, 300	244, 513	68	3, 753, 000	2,900,832	407,000	453, 000
vidual States						ŀ	00.000
							92,000
Total	65, 926, 300	51, 391, 347	78	860, 570, 400	647, 629, 952	98, 600, 000	101, 600, 000

Official estimates of the Bureau of Agricultural Economics.
 Some counties and individuals in numerous counties used 4-year and 5-year bases, which are included in this figure.

3 Base production on contracts adjusted to the 5-year base, 1928-32.

4 Estimated payments at 29 cents per bushel on 54 percent of the base production.

Agricultural Adjustment Administration.

Table 491.—Cane sugar, raw: Refiners' stocks, receipts, meltings and direct-consumption deliveries, 1934, compiled in the administration of the Jones-Costigan Act by the Agricultural Adjustment Administration

Source of supply	Jan. 1, 1934, stocks	Receipts 1	Meltings	Deliveries for direct consumption	Lost by fire, etc.	Dec. 31, 1934, stocks
Cuba	Short tons 82,080 47,099 12,327 33,469	Short tons 1,489,842 951,370 723,417 1,197,531 171,381 5,095	Short tons 1, 280, 182 927, 381 717, 055 1, 039, 871 184, 760 5, 095	Short tons 7, 128 6, 078 2 197 2 3, 517 220	Short tons 896 1 17 8	Short tons 283,716 65,009 6,148 166,462 19,870
Other areas Miscellaneous, sweepings, etc	2,812 2	24, 977 800	27, 223 801	12 1		554
Total	177, 789	4, 564, 413	4, 182, 368	17, 153	922	541,759

¹ Receipts are of sugar arriving in the ports of the United States, regardless of whether they have been imported (i. e., entered through the customs) or not.

² Includes small items which may not have gone directly into consumption.

Table 492.—Sugar, refined cane and beet: Stocks, production, and distribution by United States refiners and processors, 1934, compiled in the administration of the Jones-Costigan Act by the Agricultural Adjustment Administration

Manufacturing agency	Jan. 1, 1934, stocks	Production	Deliveries	Dec. 31, 1934, stocks
Cane sugar refineries Beet sugar factories	Short tons 369, 234 1, 341, 404	Short tons 3, 950, 020 1, 178, 173	Short tons 1 4, 016, 284 2 1, 459, 408	Short tons 302, 970 1, 060, 169
Total	1, 710, 638	5, 128, 193	⁸ 5, 475, 692	1, 363, 139

¹ Includes sales for export. The Department of Commerce reported exports of 136,481 tons of refined

Agricultural Adjustment Administration.

All figures are preliminary and were compiled from reports submitted by refiners and processors. Cane sugar refined by 3 Louisiana refineries, the aggregate output of which is relatively small, is not included in this table.

Table 493.—Sugar: Receipts for direct consumption from specified areas, 1934

Source of supply	Quantity	Source of supply	Quantity
Hawaii. Philippine Islands	Short tons 1 20, 362 64, 292 93, 620	CubaTotal	Short tons 1 1 395, 374 573, 648

¹ Refined sugar equivalent.

Agricultural Adjustment Administration.

All figures are preliminary, and include all overquota raw sugars held by refiners. Data compiled from reports submitted by 16 companies representing 22 refiners. The table includes all refineries in the United States except 3 Louisiana refineries melting only Louisiana raw sugars, the aggregate output of which is relatively small.

^{*}Includes sales for export. The Department of Commerce reported exports of 150,507 tons of remner sugar during 1934.

*Larger than actual deliveries by a small quantity representing losses in transit, through reprocessing, etc. Includes delivery of 4,500 tons to the Federal Surplus Relief Corporation.

*Equivalent to 5,888,990 short tons of 90° raw sugar.

² Quota sugar upon which duty has been paid.

Agricultural Adjustment Administration.
All figures are preliminary and were compiled in the administration of the Jones-Costigan Act.

Table 494.—Preliminary summary of results of 1934 corn-hog adjustment program of the Agricultural Adjustment Administration, by States

[Statement to Jan. 1, 1935]

State and division Corntact									
Maine 7 30 1,340 5,50 13,400 5,50 48,50 3,500 1,340 5,50 48,50 2,779 78,30 3,50 90 11,660 43,50 3,500 20,879 78,30 20,879 78,30 3,50 20,879 78,30 3,50 20,879 78,30 3,50 20,879 78,30 3,50 20,879 78,30 3,60 20,879 78,30 3,60 20,879 78,30 3,60 20,879 78,30 3,60 20,879 78,30 3,60 20,879 78,30 3,60 3,60 3,61 3,60 3,60 3,60 3,60 3,60 3,80 3,60 3,60 3,80 3,80 8,0	State and division	hog con- tracts accept- ed for exami- nation and	signers' base corn acreage as ad- justed, average	con-	tracted acreage as a per- centage of con- tract sign- ers ad- justed base	age ap- praised yield per acre on con- tracted acres as finally adjust-	amount of benefit payments for corn- acreage adjust- ment under 1934 con-	signers' number (adjusted) of hogs produced average	amount of benefit payments for ad- justment of hog produc- tion under 1934 con-
North Atlantic. 5, 920 78, 687 14, 016 17, 8 38, 4 161, 333 471, 710 1, 768, 900 Ohio	Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut New York New Jersey Pennsylvania	Number 7 184 545 234 10 92 1,877 307 2,664	30 438 2, 270 504 15 433 13, 769 4, 674	20 590 1, 115	1.1 .8 4.6 4.3 23.9	60. 0 36. 0 34. 7 33. 2 40. 6	90 43 200 5, 900 13, 600	1, 340 11, 669 20, 879 126, 212 1, 440 15, 611 85, 009 105, 584	5, 000 43, 800 78, 300 473, 300 5, 400 58, 500 318, 800 395, 900
Indiana			78, 667	14, 016	17.8	38. 4	161, 333	471, 710	1, 768, 900
Minnesota 79, 574 3, 586, 584 802, 455 22, 4 31, 7 7, 631, 300 3, 625, 619 13, 566, 100	Ohio Indiana Illinois Michigan Wisconsin	64, 404 83, 433 120, 808 24, 307 42, 945	3, 118, 471 7, 094, 632 424, 702	715, 620 1, 625, 469 79, 197	22. 9 22. 9 15. 6	35. 8 36. 3 32. 6	7, 685, 800 17, 701, 400 774, 500	4, 698, 732	17, 620, 200 22, 522, 800 2, 701, 100
Nebraska 88,600 7,878,940 1,860,213 22,6 23,8 13,282,000 4,513,236 16,924,600 W. North Central 607,288 35,688,403 8,518,848 23.9 27.5 70,196,300 30,644,476 114,916,700 Delaware 200 7,559 1,890 25.0 33.1 18,800 5,364 20,100 Maryland 3,108 90,887 21,229 22,4 7 38, 2 230,500 89,516 335,700 Virginia 10,551 231,228 54,900 22,4 7 38, 2 230,500 89,516 335,700 Virginia 2,169 44,999 10,324 22,9 34,9 108,100 64,514 241,900 North Carolina 4,091 107, 977 22,378 21,7 24,3 170,400 153,817 576,800 South Carolina 1,644 94,165 22,215 22,6 16,8 3 108,600 79,268 297,300 Georgia 565 43,229 8,592 22,1 11,1 31,900 39,416 147,800 Florida 1,597 82,031 20,688 25.2 14,2 88,000 62,964 236,100 S. Atlantic 23,955 702,225 164,189 23.4 25.2 1,240,500 790,175 2,963,100 Kentucky 23,166 779,349 193,568 Tennessee 23,610 716,322 179,103 25.0 24,9 1,387,900 610,396 2,289,000 Mississippi 236 16,553 3,886 22,5 18,5 21,600 12,747 47,800 Mississippi 36,409 96,346 231,587 22,27 22,7 28,200 12,747 47,800 Mississippi 36,409 96,346 231,587 22,27 24,3 11,170,00 160,398 2,289,000 Mississippi 36,409 96,346 231,587 22,27 24,7 28,7 28,200 12,747 47,800 Montana 4,304 55,310 14,195 25,7 16,3 69,400 1,93,259 14,800 Montana 4,304 55,310 14,195 25,7 16,3 69,400 1,93,259 14,380,900 Montana 4,304 55,310 14,195 25,7 16,3 69,400 1,93,194 44,800 Wyoming 3,67,777 894,877 894,873 24,3 21,1 5,661,100 3,834,898 14,380,900 Montana 4,304 55,310 14,195 25,7 16,3 69,400 153,184 574,400 Wyoming 3,67,777 894,873 24,3 21,1 5,661,100 3,834,898 14,380,900 Montana 4,304 55,310 14,195 25,7 16,3 69,400 163,314 574,400 Wyoming 3,67,777 894,873 24,3 21,1 5,661,100 3,834,898 14,380,900 Montana 4,304 55,310 14,195 25,7 16,3 69,400 16,833 39,172 1,386,900 Myoming 3,67,777 894,873 24,3 21,1 5,661,100 3,834,898 14,380,900 Montana 4,304 55,310 14,195 25,7 16,3 69,400 153,184 574,400 Wyoming 3,67,777 894,873 24,3 21,1 5,661,100 3,834,898 14,380,900 Myoming 3,67,777 894,873 24,3 21,14,570 22,00 421,042 1,578,900 Myoming 3,67,777 894,873 24,3 21,14,570 22,00 421,042	E. North Central	335, 897	13, 597, 620	3, 029, 931	22. 3	36. 2	32, 922, 200	16, 391, 545	61, 468, 200
W. North Central 607, 298 35, 688, 403 8, 518, 848 23. 9 27. 5 70, 196, 300 30, 644, 476 114, 916, 700 Delaware	Iowa	79,-574 173, 565 107, 998 19, 726 59, 164 88, 600 78, 671	3, 586, 534 10, 576, 079 4, 313, 855 794, 468 4, 109, 333 7, 878, 940 4, 429, 194	802, 455 2, 472, 720 1, 080, 114 173, 794 1, 045, 045 1, 860, 218 1, 084, 502	23. 6	38. 6 25. 5 17. 4 17. 0 23. 8	7, 631, 300 28, 634, 100 8, 262, 900 907, 200 5, 329, 700 13, 282, 000 6, 149, 100	3, 625, 619 12, 067, 815 4, 577, 179 584, 211 2, 357, 207 4, 513, 236 2, 919, 209	13, 596, 100 45, 254, 300 17, 164, 400 2, 190, 800 8, 839, 500 16, 924, 600 10, 947, 000
Florida. 1, 597 82, 081 20, 658 25.2 14.2 88, 000 82, 964 236, 100 S. Atlantic. 23, 955 702, 225 164, 189 23.4 25.2 1, 240, 500 790, 175 2, 963, 100 Kentucky. 23, 156 779, 349 193, 588 24.8 26.6 1, 544, 800 776, 373 2, 911, 400 Alabama. 2, 833 123, 543 28, 219 22.8 13. 2 111, 700 96, 694 362, 600 Mississippi 256 16, 553 3, 886 23.5 18.5 21, 600 12, 747 47, 800 Arkansas. 11, 034 200, 056 45, 424 22.7 20.7 282, 000 12, 747 47, 800 Oklahoma 36, 940 996, 346 231, 567 23.2 17.3 1, 201, 800 1, 082, 259 4, 085, 500 Kentucky. 283, 123, 543 28, 219 22.8 13. 2 111, 700 96, 694 362, 600 Arkansas. 11, 034 200, 056 45, 424 22.7 20.7 282, 000 247, 221 927, 100 Arkansas. 31, 034 200, 056 45, 424 22.7 20.7 282, 000 12, 747 27, 100 Oklahoma 36, 940 996, 346 231, 567 23.2 17.3 1, 201, 800 1, 082, 259 4, 058, 500 Florida. 130, 312 3, 679, 777 894, 873 24.3 21.1 5, 661, 100 3, 834, 898 14, 380, 900 Montana 4, 304 55, 310 14, 195 25.7 16.3 69, 400 153, 184 574, 400 Wyoming 3, 067 163, 597 41, 574 25.4 14.3 178, 400 74, 993 281, 200 Vyoming 3, 067 163, 597 41, 574 25.4 14.3 178, 400 74, 993 281, 200 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 334 2, 435 536 22.0 22.7 3, 800 20, 382 76, 400 Arizona 344 457 115 25.2 52 22.7 3, 800 22, 400 65, 592 246, 000 Arizona 344 457 115 25.2 52 85.8 6, 600 212, 260 796, 000 Arizona 51, 912 1, 566, 816 408, 138 26.0 13.5 1, 657, 500 21, 86, 271 8, 198, 500		-	35, 688, 403	8, 518, 848	23. 9	27.5			
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7, 607, 600 2, 160, 211 8, 180, 500	Idano Wyoming Colorada New Mexico Arizona Utah Nevada Washington Oregon California	9, 544 3, 067 13, 120 2, 574 334 2, 752 284 5, 029 6, 123 4, 781	20, 590 163, 597 1, 159, 943 130, 810 2, 435 3, 466 457 3, 059 21, 372 5, 776	2, 603 41, 574 309, 900 35, 343 536 343 115 607 1, 714	12. 6 25. 4 26. 7 27. 0 22. 0 9. 9 25. 2 19. 8	34. 7 14. 3 12. 2 19. 9 23. 7 25. 0 56. 8 36. 3 35. 9	27, 100 178, 400 1, 134, 200 202, 500 3, 800 2, 600 6, 600	359, 172 74, 993 421, 042 65, 592 20, 382 61, 771 16, 883 212, 260 229, 165	574, 400 1, 346, 900 281, 200 1, 578, 900 246, 000 76, 400 231, 600 63, 300 796, 000 859, 400
United States 1, 155, 294 55, 313, 507 13, 029, 996 23. 6 28. 6 111, 838, 933 54, 319, 075 203, 696, 300					26. 0	13. 5	1,657,500	2, 186, 271	8, 198, 500
	United States	1, 155, 294	55, 313, 507	13, 029, 996	23. 6	28. 6	111, 838, 933	54, 319, 075	203, 696, 300

Agricultural Adjustment Administration.

MISCELLANEOUS AGRICULTURAL STATISTICS

TABLE 495.—Temperature: Normal 1 and 1934, by months, at selected points in the United States

May June July August Septem-ber ber October Novem-ber ber Decem-ber	Nor- 1684 Nor- 1984 Mor 1984 Mor 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1984 Mor- 1988 Mor- 198	6. F. 0 F. 0 F. 0 F. 0 F. 0 F. 0 F. 0 F.
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June July August Septem- October Novem-	1634 Nor- 1934 Nor- 1934 Nor- 1934 mal 1934 mal	E. 0. E_1 o. F_2 o. F_3 o. F_4
June July August Septem- October	1934 Nor- 1934 Nor- 1934 Nor- 1934 Nor- mal	$ \begin{array}{c} F_1 & \circ F_2 & \circ F_3 & \circ F_4 & \circ F_4 & \circ F_4 & \circ F_4 \\ (6.02.2 & 69.6 & 62.4 & 56.2 & 44.9 & 41.1 & 31.3 & 37.1 & 67.9 & 67.2 & 69.6 & 62.4 & 69.1 & 63.0 & 64.0 & 63.0 & $
June July August Septem- October	1934 Nor- 1934 Nor- 1934 Mar- 1934	E. 0. F_1 o. F_2 o. F_3 o. F_4
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June July August	1934 Nor- 1934	F. C. C. C. C. C. C. C. C. C. C. C. C. C.
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ary	1934	\$32.82;163.838.828.245.25;25;25;25;25;25;25;25;25;25;25;25;25;2
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1 Normals are based on records of 30 or more years of observations. Normal and 1984 means based on mean of the daily temperature extremes.

TABLE 405 Table 100 Tabl				
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1 Normals are based on records of 30 or more years of observation. Normal and 1994 means based on mean of the daily temperature extremes. Weather Bureau.

Table 496.—Precipitation: Normal 1 and 1984, by months, at selected points in the United States

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1	Annual	1934	45.888888888888888888888888888888888888
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 $1\,\rm Mormals$ are based on records of 20 or more years of observations, T=Trace, indicates an amount too small to measure.

Weather Bureau.

Table 497.—Frost: Dates of killing frosts, with length of growing season

			Averages and extremes of killing frost for 30 to 51 years						
Station	Date of last kill- ing frost in spring,	Date of first kill- ing frost in fall,	Spring	frosts	Fall t	Length of growing season between			
	1934	1934	Latest date	Average date	Earliest date	Average date of first	average dates of killing frosts		
Greenville, Maine Cortland, Maine Concord, N. H. Concord, N. H. Cortland, Maine Concord, N. H. Cortland, Waine Cortland, Waine Cortland, V. H. Cortland, Conn Albany, N. Y. Canton, N. Y. Canton, N. Y. Canton, N. Y. Carton, N. Y. Carton, N. Y. Carton, N. Y. Carton, N. Y. Carton, N. J. Carton, Pa Cincimati, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Ohio Columbus, Mich Carton, Ill Chicago, Ill Chicago, Ill Chicago, Ill Chicago, Ill Chicago, Ill Corton, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Marquette, Mich Grand Haven, Mich Grand Haven, Mich Grand Haven, Mich Corand, Minn Morhead, Minn Monarded, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Minn Monrhead, Noba Columbia, Mo St. Losis, Mo St. Losis, Mo St. Joseph, Mo St	June 81	Oct. 1 1 Oct. 5	June 23 June 20	May 30	Aug. 26	Sept. 14	Days 10		
Concord, N. H	Apr. 29	Oct. 10	June 5	Apr. 19 May 7	Sept. 11 Sept. 6	Oct. 17 Oct. 3	18		
Northfield, Vt	June 81	Oct. 2	June 29	May 22	Aug. 26 Sept. 26	Sept. 18	1		
Boston, Mass	Apr. 5 1	Oct. 13 Nov. 21	May 16	Apr. 14	Sept. 26	Oct. 26	19		
Hartiord, Conn	Apr. 29	NOV. 21	May 12 May 30	Apr. 20 Apr. 24	Sept. 11 Sept. 15	Oct. 14 Oct. 15 Oct. 22 Sept. 30 Nov. 10 Oct. 22	1		
Buffalo, N. Y	Apr. 28	Oct. 14 Oct. 20	May 30 May 23	Apr. 28	l Oct. 2	Oct. 22	17		
Canton, N. Y	May 8	Oct. 1 Nov. 3 1	June 2	Apr. 28 May 4	Sept. 11 Oct. 21	Sept. 30	14		
etauket, N. Y	Apr. 51	Nov. 3 1	May 17	ADT. IN	Oct. 21	Nov. 10	20		
Atlantia City N. I	Apr. 29 1 Mor 20 1	Oct. 13 ¹ Nov. 3	May 5	Apr. 23 Apr. 10	Sept. 21 Oct. 1	Nor 5	18		
Frenton, N. J	Apr. 5	do	Apr. 30 May 12	Apr. 16	Oct. 11	Nov. 5 Oct. 24	20 19		
Erie, Pa	Apr. 28 1	do Oct. 14	Ma⊽ 17	Apr. 20	Oct. 9	Nov. 1 Oct. 28	19		
Harrisburg, Pa	Apr. 28	Oct. 13	May 12	Apr. 9	l Oct. 3	Oct. 28	2		
Scranton. Pa	Apr. 20	qu	May 29 May 12	Apr. 23 Apr. 21	Sept 14	Oct. 21 Oct. 14	1		
Cincinnati, Ohio	Apr. 28	Nov. 2	Apr. 28	Apr. 8	Sept. 19 Sept. 14 Sept. 30	l Oct. 23	1		
Cleveland, Ohio	do	Oct. 14	Apr. 28 May 21	Apr. 16	I UCT. 2	Nov. 3 Oct. 19	20		
Columbus, Ohio	do	Oct. 14	May 17	Apr. 18	Sept. 21 Sept. 30	Oct. 19	1		
Poledo, Ohio	ao	do	May 25 May 29	Apr. 18 Apr. 19 Apr. 22	Sept. 30	Oct. 20 Oct. 18 Oct. 29	12		
Evansville, Ind	Mar. 281	Nov. 12	Apr. 26 May 28 May 25	Apr. 5	Oct. 9	Oct. 29	2		
Fort Wayne, Ind	Apr. 25	Oct. 30	May 28	Apr. 25	Sept. 14	Oet. 13	Ĩ.		
Indianapolis, Ind	Apr. 131	Oct. 28	May 25	Apr. 16	Sept. 21	Oct. 20	1		
Chicago, III	Apr. 13 1	Oct. 30 Oct. 28 Nov. 12 Oct. 28	Apr. 30 May 25	Mar. 31 Apr. 16	Sept. 30 Sept. 20	Oct. 29 Oct. 19	2		
Peoria, Ill	Apr. 25	do	May 11	I Apr 15	Sept. 26	do	1		
Springfield, Ill	do	Oct. 10 Oct. 13 Oct. 19 1	May 25	do	Sept. 26 Sept. 25	do	1		
Alpena, Mich	May 12	Oct. 10	June 9	May 13	Sept. 6	Oct. 1 Oct. 15 Oct. 18	1		
Grand Haven, Mich	May 12 1	Oct. 19 1	May 31 May 28	Apr. 30	Sept. 23	Oct. 18	1 1		
Grand Rapids, Mich	May 12	Oct. 19	May 30	May 13 Apr. 28 Apr. 30 May 1	Sept. 6 Sept. 21 Sept. 23	Oct. 21 Oct. 9	Ĩ,		
Ludington, Mich	May 25	do	June 17	INTRY 2	i Sept. 4	Oct. 21	1		
Green Bay, Wis	May 12	Oct. 28	June 6 May 30	May 13 May 5	Aug. 23 Sept. 16	do	1		
La Crosse, Wis	Apr. 27 1	do	May 24	Apr. 29	Sept. 10	do	i		
Madison, Wis	Apr. 27	do	May 25	Apr. 26	I Sant 16	Oct. 17	1		
Milwaukee, Wis Duluth Minn	Apr. 28	Oct 26	May 29 June 14	May 6	Sept. 25	Oct. 18 Oct. 5	1		
Minneapolis, Minn	Apr. 27	Oct. 26 Oct. 28 ¹ Sept. 21 Oct. 28	May 20	May 6 Apr. 27 May 12 Apr. 29 Apr. 21 Apr. 20 Apr. 12	Sept. 25 Sept. 10 Sept. 13	Oct. 5	1 1		
Moorhead, Minn	May 11	Sept. 21	June 8	May 12	Aug. 25 Sept. 12 Sept. 13 Sept. 26	Sept. 24	ī		
Charles City, lowa	Apr. 27	Oct. 28	May 21	Apr. 29	Sept. 12	Oct. 2	1		
Dubuque. Iowa.	do	do	May 31 May 21	Apr. 20	Sept. 26	Oct. 9	1 1		
Keokuk, Iowa	Apr. 21 1	do	May 4	Apr. 12	i Sept. 18	Oct. 17	i		
Columbia, Mo	Apr. 25	do	Morr O	1 Tr. 10	do	Oct. 18	1		
St. Joseph, Mo	Mor 28	Nor 1	Apr. 28 May 22	Apr. 9 Apr. 3	Sept. 26 Sept. 30	Oct. 17 Oct. 29	1		
Springfield, Mo	Mar. 31	Oct. 28	May 19	Apr. 12	do	Oct. 29 Oct. 22	1		
Bismarck, N. Dak	Apr. 27	Nov. 1 Oct. 28 Sept. 15	June 7	May 11	Aug. 23	Sept. 21	î		
Devils Lake, N. Dak	May 13	do	June 16 June 21 May 24	May 16	Aug. 8 Aug. 22	1 Sept. 24	1		
Huron, S. Dak	Apr. 27 1	Sept. 21 Sept. 26 ¹	June 21	May 9	Aug. 22	Sept. 20 Sept. 25	1		
Pierre, S. Dak	Apr. 24	Sept. 26 1	May 24	Apr. 30 May 3	Aug. 23 Sept. 12	Oct. 7	ì		
Rapid City, S. Dak	do	Sept. 15 Sept. 26	ao	May 3	Sept. 13	Oct. 1	1		
Yankton, S. Dak North Pletta Nahr	Apr. 26 1	Sept. 26	May 27 May 24	May 1	Sept. 14	Oct. 6	1		
Omaha. Nebr	Apr. 25	Oct. 28 Sept. 25	May 19	Apr. 14	Sept. 10 Sept. 18	Oct. 2 Oct. 15	1		
Valentine, Nebr	Apr. 24	Sept. 25	May 19 June 21	May 6	Sept. 12	Oct. 2	i		
Concordia, Kans	Mar. 31	Oct. 28	May 19	Apr. 17	Sept. 27	Oct. 16	1		
lole Kens	Mar. SI	do	May 27	Apr. 16 Apr. 7	Sept. 23	Oct. 21	1		
Wichita, Kans	Mar. 31	do Nov. 11 Nov. 3 Oct. 14 Nov. 13 1	May 4 May 15 May 12	Apr. 7 Apr. 9	Sept. 26 Sept. 23	Oct. 17	1		
Washington, D. C.	Mar. 29	Nov. 3	May 12	Apr. 8	Oct. 2	Oct. 20	1 3		
Lyuchdurg, Va	Apr. 22	Oct. 14	May 7 Apr. 26	Apr. 9 Mar. 25	do	Oct. 27 Nov. 16	1 2		
Richmond. Va.	Mar 20	Oct. 14	Apr. 26	Mar 31	Oct. 11	Nov. 16	2		
Wytheville, Va	Apr. 28	do	May 27	Apr. 20	Oct. 11 Oct. 12 Sept. 19	Nov. 2 Oct. 17	1 1		
Elkins, W. Va	do	do	June 1	Apr. 20 May 4 Apr. 17	Sept. 20	Oct. 12	1 1		
Asheville N C	do	do	May 22	Apr. 17	Sept. 29	Oct. 12 Oct. 18 Oct. 22	1		
Wichita, Kans. Washington, D. C. Lynchburg, Va. Norfolk, Va. Richmend, Va. Richmend, Va. Eikins, W. Va. Eikins, W. Va. Parkarsburg, W. Va. Asheville, N. C. Charlotte, N. C. Raleigh, N. C. Wilmington, N. C. 1 Temperature 32° F. or below	Mar. 15	Nov. 13	May 10 Apr. 26	Apr. 11 Mar. 25	Oct. 3	Nov. 5	1		
Raleigh, N. C.	Mar. 13	Oet. 29	do	Mar. 27	do	do	. 2		
				1 7 5	1 0	Nov. 15	2		

Table 497.—Frost: Dates of killing frosts, with length of growing season—Con.

	es of her	7,00		and extre			n—Con. or 30 to 51
	Date of	Date of	Spring	frosts		frosts	Length of
Station	last kill- ing frost in spring, 1934	first kill- ing frost in fall, 1934	Latest date	Average date	Earliest date	A verage date of first	growing season between average dates of killing frosts
Charleston, S. C. Columbia, S. C. Greenville, S. C. Greenville, S. C. Atlanta, Ga Angusta, Ga Macon, Ga. Savannah, Ga Apalchicola, Fia. Jacksonville, Ga Apalchicola, Fia. Jacksonville, Fia. Jacksonville, Fia. Jacksonville, Tenn Memphis, Tenn Memphis, Tenn Memphis, Tenn Memphis, Tenn Memphis, Tenn Montgomery, Ala Montgomery, Ala Montgomery, Ala Montgomery, Ala New Orleans, La Shreveport, La Abliene, Tex Amarillo, Tex Brownsville, Tex Corpus Christi, Tex Del Rio, Tex El Paso, Tex Fort Worth, Tex Galveston, Tex San Antonio, Tex Taylor, Tex Oklahoma City, Okla Fort Smith, Ark Little Rock, Ark Havre, Mont Helena, Mont Kalispell, Mont Miles City, Mont Cheyenne, Wyo Sheridan, Wyo Sheridan, Wyo Sheridan, Wyo Sheridan, Wyo Sheridan, Wyo Vellowstone Park, Wyo Denver, Colo Grand Junction, Colo Praeblo, Colo Roswell, N. Mex Santa Fe, N. Mex Figsstaff, Ariz Phoenix, Ariz Tucson, Ariz Tucson, Ariz Yuma, Ariz Modena, Utah Salt Lake City, Utah Reno, Nev Winnemucca, Nev Boise, Galif Fresno, Calif Indepandene, Calif Los Angeles, Calif Fresno, Calif Ban Diego, Calif San Diego, Calif San Diego, Calif San Diego, Calif San Diego, Calif San Diego, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif San Bernardino, Calif	Mar. 121 Mar. 15 Apr. 14 Mar. 15 Mar. 15 Mar. 15 Mar. 17 Mar. 17 Mar. 19 Mar. 20 Mar. 11 Mar. 20 Mar. 11 Mar. 19 Mar. 27 Mar. 19 Mar.	Nov. 13 Nov. 12 Oct. 29 Nov. 13 Dec. 19 Dec. 8 Dec. 11 Dec. 9 Nov. 13 Dec. 11 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 12 Nov. 22 Nov. 13 Dec. 11 Nov. 21 Nov. 22 Nov. 22 Nov. 22 Nov. 22 Sept. 26 Oct. 28 Nov. 21 Sept. 26 Sept. 26 Sept. 26 Sept. 26 Sept. 27 Sept. 25 Sept. 25 Sept. 25 Sept. 25 Sept. 26 Sept. 27 Dec.	Apr. 2 Apr. 17 Apr. 18 Apr. 19 Apr. 18 Apr. 19 Apr. 10 Mar. 14 Apr. 10 Mar. 14 Apr. 26 Apr. 27 Apr. 24 Apr. 27 Apr. 26 Apr. 27 Apr. 26 Apr. 27 Apr. 26 Apr. 27 Apr. 26 Apr. 37 Apr. 27 Apr. 27 Apr. 27 Apr. 27 Apr. 28 Apr. 29 Apr. 20 Apr. 30 Mar. 11 Apr. 26 Apr. 30 Apr. 31 Apr. 27 Apr. 26 Apr. 30 Apr. 30 Apr. 31 Apr. 27 Apr. 28 Apr. 31 Apr. 40 June 22 June 66 May 14 June 18 June 18 June 18 June 18 June 19 June 18 June 19 June 19 June 19 June 18 June 19 June 20 June 19 June 20 June 30 June 19 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 30 June 40	Gate Feb. 28 Mar. 17	Oct. 28 Oct. 30 Oct. 10 Oct. 11 Oct. 25 Oct. 30 Oct. 10 Oct. 11 Oct. 22 Oct. 30 Oct. 3	Dec. 1 Nov. 18 Nov. 12 Nov. 13 Nov. 14 Nov. 12 Nov. 12 Nov. 14 Nov. 15 Nov. 15 Nov. 16 Nov. 16 Nov. 17 Nov. 17 Nov. 18 Nov. 19	dates of killing
Baker, Oreg Portland, Oreg Roseburg, Oreg Eureka, Calif Fresno, Calif Independence, Calif Los Angeles, Calif	Apr. 2 None None None None Feb. 27 1 None	Sept. 26 None None None Dec. 3 Nov. 21 None Dec. 11 None	June 23 May 2 May 24	May 17 Mar. 15 Apr. 8 Mar. 16 Feb. 22 Apr. 13	Aug. 30 Oct. 13 Sept. 24 Nov. 11 Oct. 31 Sept. 24 Nov. 2	Sept. 29 Nov. 21 Nov. 11 Dec. 18 Nov. 30 Oct. 27	135 251 217 277 281 197 (4)
Red Bluff, Calif	None None Apr. 4 ¹ None None	Dec. 11 None Nov. 221 None None	Jan. 20 Mar. 26	Mar. 8 Feb. 19 Mar. 8 (2) Jan. 13	Nov. 5 Nov. 11 Oct. 23 Dec. 26 Dec. 4	Dec. 5 Nov. 29 Nov. 22 (2) Dec. 29	272 283 259 (*) 350

¹ Temperature 32° F. or below.

Frosts do not occur every year.

Table 498.—Monthly and annual rainfall by States, 1934

State	Jan.	Feb.	Mar.		Мау	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	An- nual
Alabama	In. 3.71	In. 4.73	In. 6. 10	In. 3, 68	In. 3.91	In. 4.79	In. 6.55	In. 6,01	In. 2.02	In. 6.45	In. 3, 87	In. 3, 41	In. 55, 23
Arizona	. 33	.80	. 25	- 57	.54	.19	1. 25	3.17	.58	.09	. 86	1.71	10.34
Arkansas	2.86	2.00	6.53	3.51	3.36	2.88	1.66	2.75	5, 46	.79	6.89	3.78	42, 47
California	2.08	3.57	.80	- 52	.73	.74	.05	.11	.33	1.95	3.90	3. 20	17. 98
Colorado	. 22	1.62	.49	. 93	1.35	.94	1.11	1, 59	1.11	.10	. 83	.60	10.89
Florida	1, 49	3.85	3.39	4, 12	6.81	10. 22	7.30	5.40	4.59	3.64	1, 52	1.00	53, 33
Georgia	2.61	4.14	5.31	3.99	5.45	5.08	4.69	5.14	2, 57	4.21	1. 77	2.64	47.60
Idaho	2, 24	.99	1.88	1 .82	.61	1.48	. 23	.21	.56	1.87	2, 46	2, 03	15, 38
Illinois	1. 18	.89	2.34	1.81	1.06	3.03	3.27	3.79	6,64	1.66	5. 71	1.74	33, 12
Indiana	1.38	.85	2.97	1.66	1.14	3.55	2.42	4.68	5.67	. 53	2.87	2.00	29, 72
Iowa	.83	.47	1.09	1.07	1.02	3.49	3.86	2.84	5.07	1.52	5. 03	. 57	26.86
Kansas	.43	1.15	.70	1. 27	2.82	2.73	1.13	1.32	4.18	1.29	2.58	.42	20, 02
Kentucky	1.85	2.20	4.83	2.14	1.67	4.58	4.34	4.76	4.82	.88	2.85	2.18	37, 10
Louisiana	6.86	4.72	6.17	3. 19	5.38	4.80	5.00	5.44	3.57	2.19	8.00	3.91	59, 23
Maryland and Dela-				ļ	ļ	1	1		l		1		
ware	2.49	2.94	4.45	2.65	4.85	3.25	3.41	4.99	9.33	1.35	3. 57	2.75	46,03
Michigan	1.23	.62	1.84	1.98	1.23	2.18	1.46	2.47	5.14	1.97	3.88	1.59	25, 59
Minnesota	. 55	. 24	.71	1.12	.99	4.02	2.24	2.07	3.41	2.60	1.43	.95	20, 33
Mississippi	3.37	4.88	5.96	2.39	3.64	5.65	4.76	3.91	4.00	2.60	7.74	4.53	53, 43
Missouri	1.24	1.27	2.36	2.41	1.89	2.85	1.11	3.90	7.39	2.45/	5. 68	1.66	34, 21
Montana	.72	.28	1.27	. 49	.67	2.99	.74	.33	1.13	1.14	. 55	. 91	11. 22
Nebraska	. 29	.85	.72	.54	1.06	3.07	1.11	1.67	2, 51	.91	1. 22	.49	14.44
Nevada	. 47	. 93	. 45	. 43	.37	.91	.20	. 30	. 27	. 82	1.06	.92	7. 13
New Jersey	2. 55	2.77	3.31	3.89	4.63	3.68	3.65	3.61	9.00	2.49	2.91	2.90	45.39
New Mexico		. 58	.47	.49	1.16	. 52	1.34	2.57	.91	. 55	.81	. 47	10.08
New York	2.80	1.69	2.83	3.41	2.16	3.54	2.88	2.38	5.38	2, 48	2.77	2.79	35. 11
North Carolina	2.17	3.96	5.94	3.60	4.54	4.89	6.63	5. 63	6.12	2.43	4.98	2.85	53.74
North Dakota		.06	. 49	. 44	.35	3.04	1.22	1.15	.96	1.01	. 28	.30	9.50
Ohio	1.55	1.03	2.81	2. 25	.79	3.52	2.64	4. 20	3.82	. 59	1.92	1.44	26, 56
Oklahoma	1.75	1. 20	1.78	2.64	2.62	2.45	. 64	2.57	6.13	1. 33	3.63	. 72	27.46
Oregon	3. 81	1. 27	2.40	1.46	.89	1.53	. 15	. 26	. 63	3.29	5. 66	4.52	25.87
Pennsylvania	2.54	1.31	2.96	3.06	2.51	3.64	4.01	4.94	6.58	1.46	3.61	2.55	39.17
South Carolina	1.88	3.83	4. 28	3.03	5.58	4.92	4.46	5.02	3.55	3.63	2.73	2.74	45.65
South Dakota	. 25	. 17	. 96	. 50	. 69	3.35	1.88	1.32	2.11	1. 27	.47	.30	13. 27
Tennessee	2.91	2.94	8.13	2.35	2.81	5. 25	4.42	4.85	4.35	2.38	4.10	2.85	47.34
Texas.		1.67	3.35	3.14	1.88	.81	1.96	1. 27	2.79	. 42	3.95	1.82	26, 78
Utah	.79 1.62	1.41	. 39	. 42	.37	.51	. 65	.99	. 46	. 58	1.75	1. 20	9. 52
Virginia	1.02	3. 53	5. 18	2.76	4.11	3. 53	5.07	4.43	6.83	1.54	4.46	2.63	45.69
Washington	7. 13	1.54	3.99	1.42	1.97	. 67	.72	. 54	1.77	5.07	7. 25	6. 20	38. 27
West Virginia	2. 75	1.86	4. 26	2.58	2.08	3.45	4.56	5.37	4.19	1, 01	3.30	2. 20	37.61
Wisconsin	.85	.35	1.50	1.96	1.47	4.02	2.85	2.76	6.05	2.31	5. 15	1.29	30.56
Wyoming	. 52	.70	.90	1.32	. 52	1.83	1.10	.68	1.14	. 79	.64	.74	10.87
New England 1	3, 31	2.92	2.99	4.62	2.94	4.49	3.17	2.36	6.93	2.66	3.29	3.34	43.02

¹ Maine. New Hampshire. Vermont. Massachusetts, Rhode Island, and Connecticut. Weather Bureau

Table 499.—National forest areas, by regions, June 30, 1934

		,	,	00, 1004	
Re- gion	Name	Region headquarters	Gross area	Alienated lands	Net area
1234 567 8910	Northern region Rocky Mountain region Southwestern region Intermountain region California region North Pacific region Eastern region Southern region North Central region Alaska region Total	Missoula, Mont Denver, Colo Albuquerque, N. Mex Ogden, Utah San Francisco, Calif Portland, Oreg Washington, D. C Atlanta, Ga Milwaukee, Wis Juneau, Alaska	Acres 26, 560, 286 21, 214, 607 22, 017, 681 30, 783, 865 24, 210, 342 26, 914, 005 3, 605, 727 6, 799, 717 4, 533, 860 21, 396, 933	Acres 3, 768, 837 1, 831, 473 2, 085, 575 1, 594, 189 4, 857, 503 3, 792, 889 1, 764, 383 3, 346, 787 2, 349, 630 54, 633	Acres 22, 791, 449 19, 383, 134 19, 932, 106 29, 189, 678 19, 352, 839 23, 121, 116 1, 841, 344 3, 452, 930 2, 184, 230 21, 342, 300
	T Operation		188, 037, 023	25, 445, 899	162, 591, 124

negion 2: Fost Omee Building, Denver, Colo.; embracing Colorado, eastern Wyoming, South Dakota, Nebraska, and western Oklahoma. Region 3: Federal Building, Albuquerque, N. Mex.; embracing Arizona and New Mexico. Region 4: Forest Service Building, Ogden, Utah; embracing Utah, southern Idaho, western Wyoming, and Nevada.

Headquarters of national forests:
Region 1: Federal Building, Missoula, Mont.; embracing Montana, northeastern Washington, northern Idaho, and northwestern South Dakota.
Region 2: Post Office Building, Denver, Colo.; embracing Colorado, eastern Wyoming, South Dakota,

sylvania, Puerto Rico, Vermont, Virginia, and West Virginia.

Region 8: Glenn Building, Atlanta, Ga.; embracing Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, eastern Oklahoma, South Carolina, Tennessee, Texas, and portion of Virginia. Region 9: Federal Building, Milwaukee, Wis.; embracing Illinois, Michigan, Minnesota, Missouri, and Wisconsin.

Wiscousin.
Region 10: Federal and Territorial Building, Juneau, Alaska; located in Alaska.
Forest Service; see 1931 Yearbook, table 554, for lists of national monuments, national game refuges, and range reserves.
For later information, address the Forest Service, Washington, D. C.

Table 500 .- Saw-timber area, stand, growth, and depletion in the United States

				Annual depletion					
Region	Агеа	Stand 1	Annual growth ²	Cut 3	De- stroyed by fire 4	Other destruc- tion 5	Total		
New England	Thousand acres 13, 860 7, 294 5, 095 21, 224 57, 265	Million ft. b. m. 57, 875 26, 150 35, 887 34, 622 199, 297	Million ft. b, m. 764 575 116 727 6, 799	Million ft. b. m. 1, 648 1, 061 2, 709 5, 454 25, 233	Million ft. b. m. 2 7 4 12 395	Million ft. b. m. 255 14 35 59 711	Million ft. b. m. 1, 905 1, 082 2, 748 5, 525 26, 339		
Eastern regions	104, 738	353, 831	8,981	36, 105	420	1,074	37, 599		
Pacific coast North Rocky Mountain 9 South Rocky Mountain 10	44, 140 17, 026 22, 741	1, 041, 628 146, 388 125, 956	1, 785 576 389	16, 487 1, 510 540	564 393 13	1,749 474 105	18, 800 2, 377 658		
Western regions	83, 907	1, 313, 972	2, 750	18, 537	970	2, 328	21, 835		
Total	188, 645	1,667,803	11, 731	54, 642	1, 390	3, 402	59, 434		

¹ Standing timber of all species of size suitable for lumber, according to the local practice in each region as of 1930.

Forest Service: from a National Plan for American Forestry, 1933.

Table 501.—Production of lumber, by States, 1929 and 1931-33

State	1929	1931	1932	1933	State	1929	1931	1932	1933
Alabama. Arizons. Arkansas California Colorado. Connecticut Delaware. Fiorida. Georgia. Idaho. Illinois. Indiana. Kentucky Louisiana Manne. Maryland Massachusetts. Michigan. Minnesotta. Mississippi Missouri Montana New Hampshire.	ft. b. m. 2, 059 175 1, 348 12, 063 71 30 10 1, 137 1, 386 1, 029 38 170			Million ft. b. m. 757 90 514 785 34 439 473 316 8 42 47 836 105 11 12 160 49 792 41 105 101	New Jersey New Mexico New York North Carolina Ohio Oklahoma Oregon Pennsylvania Rhode Island South Dakota Tennessee Tenas Utah Vermont Virginia Washington West Virginia Wisconsin Wyoming All other	ft. b. m., 18 148 160 1, 202 176 200 4, 784 314 6 1, 088 61 764 1, 452 5 120 708 7, 302 633 843 843 26 1 20	Million ft. b. m. 7 59 74 5011 83 777 2, 628 123 3 450 277 2638 556 6 61 311 3, 908 7247 360 17 2 16, 523		Mil- lion ft. b. m. 5 89 36 5133 105 2, 256 93 3 422 30 169 594 8 8 30 3, 106 185 185 111 14

s of 1930.

2 Current annual growth of timber of saw-timber size.

3 Curt for lumber and other commodities, averaged for the period 1925-29.

4 Saw timber destroyed, averaged for the period 1925-29.

5 Destruction due to insects, disease, windfall, etc., averaged for the period 1919-29.

6 Includes New York, Pennsylvania, New Jersey, Delaware, and Maryland.

7 Includes Ohio, Indiana, Illinois, Iowa, Kansas, Missouri, Nebraska, Tennessee, Kentucky, and West Virginia.

§ Includes the coastwise States, Virginia to Texas, inclusive; also Arkansas and Oklahoma.

§ Includes Idaho and Montana.

10 Includes the other Rocky Mountain States and South Dakota (Black Hills).

Includes the cut of Nevada.
 Includes the cut of Iowa, Kansas, and Nebraska.
 Mills cutting less than 50,000 feet each year excluded.

Forest Service, in cooperation with the Bureau of the Census.

Table 502.—Stumpage: Prices per 1,000 feet, log scale, 1933 SOFTWOODS

		Pine							
State	White 1	South- ern yellow ²	West- ern yellow	Douglas fir	Firs (true) ³	Spruce 4	Hem- lock ⁵	Cypress	Cedar 6
Alabama		\$3.47	\$2,39						\$7. 17
		2.72	ф4. 09					\$2,38	
Arkansas California	\$3, 27	_,	2, 44	\$1.60	\$0.59			7 1.98	.77
Colorado			1.98	2, 23	2.00	\$2, 27		. 7. 20	. 11
Connecticut	4.80		1.90	2.40	2.00	φ2. 41	\$3, 31		
Florida		5.04					φο, στ	4,71	
Georgia		2, 23						4.72	
Idaho	6, 72	2.20	2.09	.70	1.00	1.00		T. 12	1.00
Kentucky			2,09		1.00	1.00			9.00
Louisiana		3, 38						3, 98	9.00
Maine	3, 94	0.00			4, 00	4.19	3.78	0.00	6, 50
Maryland	0. 51	4, 51			7.00	7,10	9.10		0. 50
Massachusetts	5, 46	7.01					4, 63		3, 00
Michigan	7.77				1. 34	5, 00	1,82		1.72
Minnesota	3.85	~~~~~			.75	1.87	1,02		1.12
Mississippi		3, 50				1.01		6.64	
Missouri		3.38						4, 55	
Montana		0.00	2. 19	.60				3.00	
New Hampshire	4. 92		2. 15	1 .00		3, 71	4,00		
New Mexico	4, 92		2, 25	1,00		0.71	9.00		
New York	7, 49		2.20	1 2.00		10.00	4. 93		
North Carolina	3. 69	3, 58				10.00	.75	3, 32	1.00
Oklahoma	0.09	2.02					.10	0.04	7.00
Oregon	3, 27	2.02	2.78	1. 35	1, 52	2.12	. 63		7.74
Pennsylvania			2.10	1.00	1.02	2.12	5.67		
Rhode Island							0.01		
South Carolina		2, 96							
South Dakota		2. 50	3, 27						
Tennessee	4. 32	3, 03	0. 21					3, 00	12.72
Texas	7. 52	3.08						5.00	12,14
Utah		5.00	2, 50						
Vermont	3, 48		2.00			5.63	2.50		
Virginia		3, 37				0.00	3,00		
Washington		0.01	2, 03	2.69	. 53	3. 15	1.00		2, 82
West Virginia	0.00	5, 00	4.03	2.09		0. 10	.84		4.04
Wisconsin	8. 25	3.00			1. 11	2, 56	2.66		2. 00
Wyoming	0, 20		2.74		2.11	2.00	2.00		4.00
11 1 OTHINS			2.14						

¹ Northern white pine in States east of the Great Plains. Western white pine in Idaho, Montana, and Washington. Sugar pine in Oregon and California.
¹ Includes all sales of southern pines.
³ Balsam fir in Eastern and Lake States. White fir in Western States.
⁴ Red, black, and white spruce in Eastern States. Sitka spruce in California, Oregon, and Washington, Engelmann spruce in Colorado, Idaho, Utah, and Wyoming.
⁵ Eastern and western hemlock for Eastern and Western States, respectively.
⁵ Northern white cedar in Northeastern and Lake States. Port Orford cedar in Oregon. Eastern red cedar in Alabama, North Carolina, and Tennessee. Incense cedar in California. Western red cedar in other States. other States.

Table 502.—Stumpage: Prices per 1,000 feet, log scale, 1933—Continued Hardwoods

	Oak	Maple	Elm	Gum	Cotton- wood 8	Yellow poplar	Birch	Bass- wood	Hick- ory	Beech
Alabama. Arkansas. Connecticut. Florida. Georgia. Illinois. Indiana. Kentucky. Louisiana.	4. 29 1. 88 2. 96 5. 80 13. 91 5. 37	\$3.00 4.00 .93	\$4.00 3.00 9.73	\$2. 13 2. 59 1. 09 2. 50 8. 08 4. 00 3. 31	\$6.00 4.05 3.83 5.18	2. 50 15. 00 10. 64 10. 25		12.00 16.13	\$2.00 3.38 6.87 	
Maine Maryland Massachusetts Michigan Minnesota	10.00 5.41 4.00 9.31	4.00 5.60			5.00	5.00	\$5. 32			
Minnesota Mississippi Missouri New Hampshire New Jersey New York	3. 53 2. 01 7. 50	3.00 5.46		3.00	3.87	2. 17	3. 60 4. 34		7. 07 2. 00	
North Carolina Ohio Oklahoma Oregon	3. 20 8. 53 6. 81	7. 01 4. 93 9. 68 	9, 22	2.00	5. 67 1. 12	13, 47		5.05 7.57	8.92	4. 79
Pennsylvania Rhode Island South Carolina Tennessee Texas	4.00 4.28 4.88	3.68		3.78 6.12 2.00		5. 10		12.00	6.00	
Vermont Virginia. Washington. West Virginia. Wisconsin	4.30 5.00 4.21	1. 81 3. 00 5. 68	5. 76		1.00	4. 72 5. 12				

⁸ Includes aspen.

Forest Service, in cooperation with the Bureau of the Census.

Table 503 .- Logs: Prices per 1,000 feet, log scale, f. o. b. manufacturing plant

SOFTWOODS

		Pine							
State	White ¹	South- ern yellow ²	West- ern yellow	Douglas fir	Firs (true) ³	Spruce 4	Hem- lock ⁵	Cypress	Cedar
Alabama		\$9.20 8.38						\$10.85 10.56	\$24.16
Arkansas			\$10.46	\$10.72	\$6, 55			7 7.34 17.25	7. 92
Georgia	\$13.42	9.21	7. 43						7. 38
Indiana Kentucky Louisiana		11. 29						11.85	35. 70
Maine Massachusetts	12.66				13. 63	12.88	\$11.50 11.00		14. 64
Michigan Minnesota	15.05					20. 37	11.61		9.00
Mississippi		7.91 6.18							
Montana New Hampshire	13. 21 10. 89		17.45			11.51	10.62		
New York North Carolina	10.00	9.57					14.45 8.74		
Oklahoma Oregon Pennsylvania	9.96	6. 10	9.14	9.83	7. 35	10.36	7.81 13.49		9.8
South Carolina		9. 16						11.84	
Tennessee	13.07	6, 74 9, 66					10.00	13. 07 11. 40	21, 53
UtahVermont	10. 59		9.00		10.00	14.00	10.91		
Virginia Washington	. 13.87	10.03	8. 74	11. 10	10.06 8.49	10.41	7. 79 12. 81	17.04	11.0
Wisconsin	10.31				0.49	12. 25	12.81		8.00

¹ Western white pine in Idaho, Montana, and Washington. Sugar pine in Oregon. Northern white

Western white pine in Idaho, Montana, and Washington. Sugar pine in Oregon. Northern white pine in other States.
 Includes all sales of southern pines.
 White fir in California, Idaho, Oregon, and Washington. Balsam fir in other States.
 Engelmann spruce in Colorado and Montana. Sitka spruce in California, Oregon, and Washington. Eastern spruce in other States.
 Eastern and western hemlock for Eastern and Western States, respectively.
 Western red cedar in Idaho, Oregon, and Washington. Northern white cedar in Maine, Wisconsin, and Michigan. Incense cedar in California. Eastern red cedar in other States. 7 Redwood.

Table 503.—Logs: Prices per 1,000 feet, log scale, f. o. b. manufacturing plant, 1933.—Continued

HARDWOODS

	Oak	Maple	Elm	Gum	Cotton- wood 8	Yellow poplar	Birch	Bass- wood	Hick- ory	Beech
AlabamaArkansasConnecticut		\$11.58 29.00	\$10.61	\$10.84 14.01	\$10.52 10.82	\$14.07 9.50		\$10.00	\$17.39 17.60	\$8. 13 9. 50
FloridaGeorgia	13.81	14.00	12.00	13. 15 11. 25	12, 17				28.67	
IllinoisIndiana	24. 22 29. 33	13.00 27.02	13. 69 12. 21	13. 03 24. 94	11.62 13.55	12. 61 22. 06 23. 36	\$12.78 8.00	20, 62	16. 00 19. 53	15. 15
Iowa Kentucky Louisiana	24. 07 13. 60	29. 92 10. 00	10.00 10.01	25. 16 11. 95	10.00 17.50 9.88	33. 52 20. 35		12.00 32,22 10,45	14. 50	
Maine Maryland Massachusetts	19.80	15, 00					17. 62 16. 34	15.00		
Michigan Minnesota	17.68	17. 70			14.07		20. 25	17.32	21, 56	13.09
Mississippi Missouri	10.33 11.45	11. 73 6. 00	11.62 13.12	11.38 7.11	10.49	12.75		10.83	14. 90 12. 33	10.42
New Hampshire	15.82	21. 05					23.00			11.00
New Jersey New York North Carolina	16, 41 12, 93	21. 98 13. 30	17. 24	12.69	30, 00 9, 00	17.55	18. 72	16.78	20.00	14. 50
OhioOklahoma	18.81	21. 19	22. 27		7.00	19.10		20.32	28.01	13. 51
Oregon Pennsylvania Rhode Island	20.00 16.54	12. 83 18. 89			7.01	1	31.32	9 9.34 29.79	14, 62	1
South Carolina Tennessee Texas	12.34 19.16	11. 77 14. 22	11.00 8.53	11. 33 11. 26	10, 07 10, 19 11, 00	10. 49 15. 78		10.75	l	
Vermont Virginia		16. 72	13.84	19 37	8.00	17. 36		14.38		14.09
Washington West Virginia	38.41	13. 11		10.01			14.82	9 10.61		
Wisconsin		18. 57	15. 70		10.09	27.00	22,84	21,54		16.00

⁸ Includes aspen.

9 Alder.

Forest Service, in cooperation with the Bureau of the Census.

Table 504.—Average value of lumber at the mill per 1,000 feet board measure, in stated years

Kind of wood	1899	1909	1919	1927	1929	1930	1931	1932	1933
Softwoods:	Dollars		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Balsam fir Cedar	(1)	13.99	32. 23	25.92	25. 40	26.72	19. 34	19.32	19.79
Cedar	10.91	19.95	33, 80	34. 39	34.83	31. 14	24.08	24.55	25.91
Cypress	13. 32	20.46	38.38	39.91	35. 29	33. 10	30. 14	24.62	26.30
Cypress Douglas fir Hemlock	8.67	12.44	24.62	19.45	20.05	16.91	12, 05	10.63	13. 57
Hemlock	9.98	13.95	29.16	19.06	18.90	17.04	14. 13	12.39	14.27
Larch (tamarack)	8.73	12.68	23, 39	17.69	18. 35	17.18	14. 18	10.76	13. 34
Larch (tamarack) Lodgepole pine Redwood	(1)	16. 25	29.98	20.82	17.97	17.64	14.46	12.45	16.23
Redwood	10.12	14.80	30.04	33. 81	31.00	30. 33	29.82	24.33	26, 29
STOPITOD	1 11 97	16.91	30.76	26. 59	28.64	23.66	23.00	17.73	18.89
Sugar pine Ponderosa pine	12.30	18. 14	35, 99	43. 22	43.08	38. 10	28.76	26.26	27.95
Ponderosa pine	9.70	15.39	27.75	26.04	26.47	23. 52	20.48	16.88	18. 57
		13. 10	25.66	19.92	20.63	17. 57	14.94	12, 23	15. 30
White pine	12.69	18.16	32, 83	29.90	29.87	27.81	24.71	21.58	21.45
White pineYellow pine	8.46	12, 69	28.71	23.77	25. 66	21.06	16.99	13.32	17.91
Hardwoods:	1	ł	1		Į]	1
AshBasswood	15.84	24.44	52.69	43.82	43.14	39.72	41.06	28,74	33. 23
Basswood	12, 84	19.50	40.03	89.84	39.88	35. 51	28.54	23.81	29.19
Beech	(1)	13. 25	29, 98	27. 21	28. 39	25, 89	22, 93	17.97	22.75
Birch	12.50	16.95	35.79	41.03	39. 35	36, 39	30.95	26.26	29. 02
Chestnut	13. 37	16.12	32, 30	29.35	29. 51	23.91	22, 50	17.87	23.01
Cottonwood	10.37	18.05	32. 24	30.92	29.70	22.73	19.54	16.49	22.18
Chestnut Cottonwood Elm	11.47	17. 52	36.39	36. 22	35. 28	30, 20	25. 37	19.07	23.09
Gum, red and sap	9.63	13. 20	32.68	32.81	34. 42	27.67	22.68	16.84	23. 01
Hickory	18.78	30.80	44.37	37.08	40. 33	33.00	32.65	29.85	26, 27
Maple	11.83	15.77	35. 56	35. 35	36. 93	34, 54	28.80	22.82	30. 51
Oak	13.78	20. 50	37.87	35.72	38. 43	29. 29	27, 68	22.84	28. 53
Sycamore	11.04	14.87	30. 32	29.31	30.07	26. 54	22.40	18.71	22.78
Tupelo	(1)	11.87	28. 42	24, 45	25. 39	23. 47	19.05	17.40	22. 01
Walnut	36.49	43. 79	72,13	111.64	119. 15	100.75	90. 44	57.87	77. 61
Yellow poplar	14.03	25. 39	41.65	38. 58	40.66	35. 19	30. 02	26.02	29. 91
All kinds	11. 13	15. 38	30. 21	25. 80	26. 94	22, 81	18. 56	15.12	18. 55

¹ No data available.

Table 505.—Pulpwood consumption, wood pulp and paper production by States, 1930-33

g ₁ , t ₁	Pulp	wood e	onsum	ption	Wood pulp production				Pa	aper production			
State	1930	1931	1932	1933	1930	1931	1932	1933	1930	1931	1932	1933	
California Louisiana Maine Massachusetts Michigan Minnesota Mew Hampshire New York Ohio Oregon Pennsylvania Tennessee Vermont Virginia Washington West Virginia Wisconsin	280 230 243 763 (2) 3 351	1, 112 33 251 198 151 583 (2) 293 95 25 368 1, 026	1,000 cords 449 949 20 216 211 (1) 438 (2) 265 238 (1) (2) 338 688 (2) 797	980 20 252 235 155 479 (2) 242 224	29 193 182 138 596 (2) \$ 249 189 53 25 216 566 (2)	889 24 150 148 90 467 (2) 238 160 68 26 223	134 (2) 354 (2) 187 130 (2) (2) (2) 208	779 12 154 154 79 394 (3)	1, 029 491 991 279 158 1, 348 860 129 666 97 69 262 395	1, 160	324 830 328 734 208 117 912 612 183 545 82 60 253 343 37	394 837 350 893 233 134 993	
All other States	661		1,024	1, 027	344	499	629	649	2, 016	1, 920	1,658	2, 024	
Total	7, 196	6, 723	5, 633	6, 562	4, 630	4, 409	3, 760	4, 293	10, 169	9, 382	7, 998	9, 190	

Forest Service, in cooperation with the Bureau of the Census.

Table 506.—Pulpwood consumption, wood pulp and paper production of the United States, 1899, 1904-11, 1914, and 1916-33

Year	Pulpwood consump- tion	Wood-pulp production		Year	Pulpwood consump- tion	Wood-pulp production	Paper production
1899	Cords 1, 986, 310 3, 050, 717 3, 192, 123 3, 661, 176 3, 962, 660 3, 346, 953 4, 001, 607 4, 024, 306 4, 228, 052 4, 470, 763 5, 228, 558 5, 480, 075 5, 250, 794 5, 477, 832	Short tons 1, 179, 525 1, 921, 768 2, 118, 947 2, 495, 523 2, 533, 625 2, 888, 134 2, 893, 150 3, 435, 001 3, 509, 939 3, 313, 861 3, 517, 952	Short tons 2, 167, 593 3, 106, 696 4, 216, 708 5, 270, 047 5, 919, 647 6, 051, 523 6, 190, 361	1920	Cords 6, 114, 072 4, 557, 179 5, 548, 842 5, 872, 870 6, 786, 007 6, 750, 935 7, 160, 100 7, 645, 011 7, 195, 524 6, 722, 766 5, 633, 123 6, 561, 674	Short tons 3, 821, 704 2, 875, 601 3, 521, 644 3, 788, 672 4, 394, 766 4, 513, 403 4, 510, 800 4, 862, 885 4, 630, 304 4, 3760, 267 4, 293, 344	Short tons 7, 334, 614 5, 356, 317 7, 017, 800 8, 029, 482 9, 182, 204 1, 9, 794, 086 10, 002, 070 10, 403, 338 11, 140, 235 10, 169, 140 9, 381, 850 7, 997, 872 9, 190, 017

¹ Estimated by the American Paper and Pulp Association.

Included with Oregon.
 Included in "All other States."
 Includes California.

Forest Service; compiled from bulletins of the Census Bureau, the Forest Service, and the Federal Trade Commission.

Table 507.—Pulpwood consumption, by kinds, 1909, 1919, and 1929-33

Kinds of wood	1909	1919	1929	1930	1931	1932	1933 1
Spruce: Domestic Imported Hemlock:	Cords 1, 653, 249 768, 332	Cords 2, 313, 419 873, 795		Cords 1, 844, 937 888, 255		Cords 1, 423, 836 608, 171	
Domestic ImportedPine:	559, 657	795, 154	1, 309, 170 15, 379	² 1, 222, 961	² 1, 191, 048	² 806, 230	1, 101, 642 10, 914
Southern yellow Jack Miscellaneous	(³) (³) 90, 885	234, 463 51, 581 7, 566	² 205, 760	1, 030, 278 200, 970	1, 294, 503 2 159, 273	1, 279, 832 2 154, 214	1, 560, 414 178, 974
Poplar: Domestic Imported Balsam fir:	302, 876 25, 622	180, 160 158, 22 0					² 333, 438
Domestic Imported Yellow poplar	95, 366	106, 974 72, 605	45, 412	48, 935	55, 601	47,835	41, 465
White fir Beech, birch, and maple Gum		4 183, 426 30, 355	111, 054 76, 950 39, 685	90, 652 68, 848 41, 825	109, 277 69, 681 22, 440	70, 968 65, 958 17, 553	154, 847 93, 032 (5)
Tamarack (larch) Other woods Slabs and mill waste	188, 077 248, 977		153, 485	232, 980	126, 942	2 105, 868	252, 436
Total	4, 001, 607	5, 477, 832	7, 645, 011	7, 195, 524	6, 722, 766	5, 635, 133	6, 561, 674

Forest Service, in cooperation with the Bureau of the Census.

Table 508.—Paper: Consumption by kinds, and apparent per capita consumption, specified years, beginning 1810 $^{\rm 1}$

Year	News- print	Book	Boards	Wrap- ping	Fine	All other	All kinds	Apparent per capita
1810	1,000 short tons 569 883 1,159 1,570 1,824 1,760 2,002 2,451 2,451 2,451 2,451 3,517 3,517 3,492 3,561 3,818	314 495 689 926 846 800 833 1,060 707 968 1,235 1,365 1,408 1,265 1,403 1,265 1,321	394 521 883 1, 292 1, 805 1, 927 1, 940 2, 801 1, 641 2, 802 3, 623 3, 623 4, 909 4, 909	1,000 short tons 			2 3 2 12 2 38 2 78 2 127	
1930 1931 1932 1933	3, 261	1, 370 1, 195 935 1, 069	4, 014 3, 795 3, 297 4, 055	1,556 1,383 1,233 1,425	480 418 472	1, 116 885 1, 130	11, 230 9, 599 10, 862	181 154 173

¹ Preliminary.
2 Includes imported wood.
3 Included in "Miscellaneous pines."
4 Includes chestnut.
5 Included in "other woods."

¹ Imports added to United States production and domestic exports deducted.
2 Domestic production only, value of exports and imports being approximately equal.
3 Data for 1924 not available.

Forest Service; a computed table based on Bureau of the Census and Forest Service bulletins.

Table 509.—Stock grazed on the national forests, and receipts, 1905-34

Fiscal year	Cattle	Horses	Hogs	Sheep	Goats	Receipts for grazing by fiscal years
1905	1, 491, 385, 1, 491, 381, 1, 351, 922, 1, 403, 1, 455, 922, 1, 517, 045, 1, 527, 321, 1, 758, 768, 198, 2, 197, 527, 2, 033, 800, 885, 599, 680, 1, 382, 491, 1, 558, 942, 1, 456, 858, 1, 431, 1, 335, 943, 1, 321, 431, 1, 338, 373, 1, 331, 1, 331, 1, 331, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	Number 59, 331 (2) (7) (7) (7) (90, 019 84, 552 91, 516 95, 343 95, 919 98, 903 98, 903 98, 903 102, 156 64, 104 68, 184 57, 396 48, 171 42, 337 37, 335 35, 105 31, 797	Number	Number 1, 709, 987 5, 762, 200 6, 687, 083 6, 960, 919 7, 679, 698 7, 558, 650 7, 371, 747 7, 467, 789 7, 789, 953 7, 580, 634 8, 454, 240 6, 536, 377 6, 447, 912 6, 921 6, 693, 583 6, 583, 683 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583 6, 583, 583	Number (1) (2) (3) (2) (3) (2) (3) (3) (9) (2) (3) (9) (2) (77, 688 83, 849 76, 898 55, 616 49, 899 57, 968 60, 789 53, 685 64, 757 928, 068 115, 686 117, 070 115, 497 113, 496 114, 645 112, 438 111, 048	Dollars (1) 513, 000 887, 005 947, 365 41, 022, 516 969, 971 927, 967 991, 489 993, 369 1, 130, 495 1, 120, 215 1, 725, 822 1, 735, 822 1, 735, 975 1, 715, 561 1, 715, 561 1, 715, 577 1, 421, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 742, 589 1, 748, 201 1, 742, 914 1, 960, 642 822, 960 1, 488, 209 1, 385, 688
***************************************						1,5,00,500

No data available.
 Included with cattle.
 Included with sheep.

Forest Service.

Table 510.—Number of stock grazed in national forests, by States, calendar year 1933, and total grazing receipts, fiscal year 1934

			,		, 	
State	Cattle	Horses	Hogs	Sheep	Goats	Receipts from grazing 1
Arizona Arkansas California Colorado Florida Idaho Montana Nebraska Nevada New Hampshire New Mexico North Carolina Oregon Pennsylvania South Dakota Tannessee Utah Virginia Washington West Virginia Wyoming	91, 747 717 2, 143 83, 159 53 29, 704 515 108, 831 958	Number 1, 339 3, 883 2, 160 4, 569 6, 151 407 1, 823 2, 1, 704 8 1, 340 1, 067 2, 3, 251 3, 309 11 3, 758	Number 115 51 125 31 60 129 22	Number 291, 072 5 367, 723 945, 954 1, 313, 633 585, 598 307, 820 191, 617 70 612, 336 30, 661 15 738, 776 14, 4974 1, 425 618, 956	Number 862 50 100 10, 225 8	Dollars 101, 06 106, 90 300, 75 178, 14 109, 88 4, 76 67, 60 2, 09 100, 34 15, 47 165, 74 26, 31 26, 31 165, 52
Total	1, 366, 538	31, 797	533	6, 150, 921	11,045	² 1, 358, 68

Forest Service.

<sup>Subject to revision.
Last 6 months only.
Calendar year.</sup>

 $^{^1}$ Includes grazing trespass. 3 Includes Georgia \$319, Maine \$3, South Carolina \$87, and Wisconsin \$

Table 511.—Free-use timber, cut from national forests, by States, 1931-34

	198	31 1	193	32 1	193	3 2	19	34 2
State	Quan- tity	Esti- mated users	Quan- tity	Esti- mated users	Quan- tity	Esti- mated users	Quan- tity	Esti- mated users
Alaska Alabama Arizona Arkansas California Colorado Florida Idaho Louisiana Michigan Minnesota Montana Nebraska Nevada Nevada Nevada Nevada Nevada Ner description Oregon Pennsylvania South Dakota Tennessee Utah Viginia Washington West Virginia Washington Wisconsin Wyoming **Tennessee Wisconsin Wyoming **Tennessee Wisconsin Wyoming **Tennessee Wisconsin Wyoming **Tennessee Wisconsin Wyoming **Tennessee Wisconsin Wyoming	331 5, 674 10, 894 45 30, 975 981 219 17, 375 22, 503 1, 757 22, 503 1, 757 22, 620 3, 565 1, 706 22, 620 438 2, 741 81	Number 7 7, 495 9, 548 4, 138 555 14, 743 254 110 9, 281 312 4,70 14, 473 114 2, 949 5,000 1, 352 12, 560 306 721 33 12 1, 800	Myt. b. m. 58 13, 021 9, 809 15, 428 59, 572 3, 173 704 28, 696 42 1, 801 27, 962 2, 123 34, 930 1, 337 5, 200 2, 907 35, 332 34, 331 10, 570	Number 4	M ft. b. m. 1, 081 1, 623 11, 760 14, 083 11, 760 14, 180 3, 078 1, 290 31, 372 29, 255 2, 072 29, 255 33, 481 1, 947 3, 882 2, 078 39, 346 1, 189 39, 346 1, 189 3, 389 2, 295 12, 935	Number 304 7 6, 882 118 21, 518 5, 428 307 17, 820 45 613 20, 806 657 11, 338 3, 694 22, 899 1, 002 66 71 3, 933	M ft. b. m. 2, 948. 1, 180 14, 568 1, 1227 15, 696 14, 166 151, 300 2, 750 3, 264 31, 109 86 1, 846 23, 485 3, 114 24, 284 2, 780 8, 191 3, 533 23, 075 7, 121 20, 95 12, 566	Number 675 1200 8, 667 486 14, 601 15, 795 124 16, 654 500 1, 5295 17, 802 1, 395 17, 802 3, 148 1, 382 3, 453 1, 389 13, 13 3, 945
Total	167, 680	81, 618	270, 244	125, 472	265, 812	133, 631	248, 243	113, 821

¹ Calendar year.

Forest Service.

Table 512.—Fires on national forests, 1924-33

		1	Damage			
Year	Fires	Area burned ¹	Timber destroyed	Value, ali items ;	fighting fire 3	
1924 1925 1926 1927 1927 1928 1929 1930 1930	Number 8, 247 8, 263 7, 095 5, 693 6, 921 7, 449 8, 388 8, 466 7, 037 6, 315	Thousand acres	M ft. b. m. 677, 925 342, 554 1, 329, 573 84, 396 234, 460 1, 427, 551 689, 631 57, 805 46, 397	Dollars 1, 892, 605 968, 892 5, 716, 660 375, 338 1, 395, 018 5, 831, 838 493, 329 4, 409, 309 685, 943 387, 081	Dollars 1,715,706 947,773 2,288,358 710,212 1,309,875 3,400,403 1,303,099 4,271,294 1,107,931 4,109,611	

Forest Service.

² Fiscal year.

Government and private land inside national-forest boundaries.
 Includes the reported value of timber destroyed, forage, and buildings.
 Includes the cost of emergency patrol, tools, and supplies.
 Includes \$593,946 from E. C. W. funds.

Table 513.—Emergency Conservation Work: Forest-fire prevention work completed Apr. 5, 1933-Mar. 31, 1934

State	Camps	Fire breaks	Reduc- tion of fire hazards	Road and trail- side clearing	Look- out towers	Fight- ing for- est fires	Fire presup- pression	Fire preven- tion
Alabama	111 116 122 301 118 119 124 112 223 232 120 100 5 5 3 121 122 244 141 142 244 143 144 145 147 147 147 147 147 147 147 147 147 147	Miles 3, 113 941 4 4 37 3, 188 2, 409 48 11 23 11 217 7, 262 112 217 28 262 17 46 11 28 134 76 171 11 28 29 11 11 28 20 27 27 62 9 13 566 125 21 25 266 21 25 266 21 25 266 266 27 27 27 28 28 29 20 27 27 20 27 27 28 28 29 20 27 27 20 21 21 21 22 20 21 21 21 21 21 21 22 21 22 22 23 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	Acres 7, 473 13, 25 5, 720 35, 903 698 178 178 34, 693 2, 683 3, 2506 523 229, 515 313 6402 235, 367 23, 37 1, 853 1, 834 3, 937 1, 853 1, 853 1, 853 1, 854 2, 542 235, 367 23, 37 1, 608 24, 816 3, 031 529 307 15, 683 3, 031 15, 232 180, 232 180, 232	Miles 28 1567 2, 276 252 106 148 438 4427 111 154 164 164 164 1779 3 16 35 5 122 120 109 76 33 128 502 1, 053 157 551 1, 223 217 120 109 1157 1, 223 217 120 109 1157 1, 223 221 120 109 109 1157 1, 223 221 120 109 109 109 109 109 109 109 109 109 10	Num-ber 5 6 6 13 12 28 15 7 7 1 1 8 8 11 1 1 1 2 2 6 6 5 4 4 39 9 6 6 222 14 5 24	Man- days 21, 578 1, 181 20, 006 114, 895 1, 189, 495 16, 839, 770 22, 764 22, 760 3, 438 15, 642 739 379 54, 044 55, 253 1, 131 1, 011 6, 766 28 2, 592 10, 379 7, 578 51, 249 10, 379 11, 247 1, 531 1, 247 1, 531 247 1, 531 279, 235 4, 671 79, 235	Man-days 3, 860 21, 533 76, 737 14, 555 9, 613 1, 166	Man-days 549 787 9,383 67 875 1,318 824 20 20 452 20 452 6,687 83 350 1,502 19 347 191 671 113 113 605 910 1,233 428 229 1100
United States	1, 156	17,317	486, 587	13,005	334	636, 954	221, 519	31, 490

¹ Average number of camps.

Forest Service.

This table reports only the forest-fire prevention and suppression work of the C. C. C. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1934.

Table 514.—Emergency Conservation Work: Flood-control work completed Apr. 5, 1933-Mar. 31, 1934

	LABLE	ABLE 314, Line geney Consolvation of the	anter year	, ,	2000						4	/ T	,		-				
	Surv	urveys	0	Clearing				D.	Dams			Channel	nnel		Reconst	Reconstruction of existing dams	of existin	ng dams	
State	I inas and	Tono.	Dam	_	Chan-	Earth	-	Excavation	-	Con- Rock	- A	excavation	ation	Excavation		Con- New	W Steel	T.avpes	Crib-
	grades	graphic	site	bank	nel	III	ping 1	Earth R	Rock cre	crete All		Earth	Rock	Rock Earth		noval crete			
	Lin. ft.	Sq. yd.	Sq. yd.	, E. S.	Lin.	Cu. yd.	g.g.	Zű.	gd.	Cu. Cu.	Lb.	yd.	ğçiç Z	Çu.	Cu.	Cu Cu. yd. yd.	Lb.	gg.	Lin. ft.
Alabama.				96	282					2 3.4	36	25						6, 213	
California	227,825	2, 445, 097	79,900	134, 560	35, 395	1,085	6,530	4,080 2	2,400	958 7, 2	289 24, 347	7 28, 677	Ö,	060 30, 012	-	-	-	159,837	82,441
Colorado			4,	-	064	65		3, 113					₽		1 1	1 1		700 17	- 1
Togho	1.56, 040			100								97					-	220	
Indiana			;	38, 607		35	-		i	-		1		+			-	010	110
Lowa	169,860	440,200	124,500		1,500	45, 626 10, 814		30 320 6	1, 375	473	75 5, 045	5 34, 871	497	173 13, 000	000	154	88064,000	1,828	1, 110
Kantusky	30,000				900 000	oro fort								+					
Louislana	266, 600		1, 853, 844					1, 661		-	1	- 820		-	-	-	-		
Maine							-		1	1		- 1,560			1000	10	90g	214	-
Maryland			074 770		-	200	-	1 000	-	25.0	92	-		+	3	5	2	6.015	1 1
Massachusetts	17,004		304, /4U		1	770		T) 000		000	3 :	100							
1	4, 739, 637		33,368		380	45, 728		18, 982	1	826 17, 587	87 8, 406	9	692	-	+			145	
	40,940	1	į			3,863	-		i		į,			-	100	1	-	9 60	1
	443, 708	752, 212	27, 115	4, 174	6,065	91,420	43	25, 594	148	261	349 11, 368	7,526	20	-	, Se		1	4.5	94,136
1	274, 688	30, 887, 200			12,	86,703	30	1,000	100	1	195			- 36	-	-	1	1,688	
1	1000	1		1		OGT	3	o, 103	3			-		3		-	-		
New Jersey	150,000	10,000			-		-	-		1								300	256
New York	9.670	4,000	1.530		9	14,825	5, 417	8, 420	1,304	408	29	1,460	75	-	-	-	-	- 531	
North Oarolina	1,000		-		250						18	900				+		10 01	
North Dakota	100		1000	-	00	210, 527	- 066	6 74E	2 669 9	249 7 259	58 15 084	2,560		+	1	-		10, 21	1 1
Oklanoma	107, 920		001,000	-	35	17, 80,		, ,	5	1	Š							2,800	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Donneylyania		39,611		108,480	2,890	5.033		1.832		ŕ	025	625	300		1	-	-	1,988	220
South Dakota	151,960					74, 746		-	-	117 8,8	3,000	17		-	1		-		-
Tennessee.		ij		24,000	111	111111111111111111111111111111111111111	-	100	į٠	100	1			+		-	1	-	
Texas.	10,000	3, 800, 000	į	10	88	16, 559	100	9,000	335	530	595 1,88	1,880	10 700	1002	1		-	64 867	10.627
Utah	182, 584	ੜੰ		26, 035 128, 045	4, 530	80,08	* 2 2 5 1	22, 230	f	, , , , , , , , , , , , , , , , , , ,	·	104, 041	3	000					1
Verminfo		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			8												1	-	- ;
Washington	105,970				2,000		-	2,500 2	2, 500	8	356	1,000		1	1	+	-	8	2,490
West Virginia.	109,880	6,000	1	100	-	100	-			070 7	000 707	070 77		+		-	1	040	:
W isconsin.	3, 001,			152, 800 137, 950		7993, UNI		125	F	717	00 ±0± 70								
United States 110, 940,		651 48, 512, 559 3, 428, 323 049, 388 88, 840 1, 088, 928 63, 164 166, 711 28, 437 22, 769 88, 766 540, 101 273, 738 71, 378 35, 714 14, 100	3, 428, 323	640,388	88,840	,038,928	63, 16411	66, 711125	3, 437 22,	76988,7	66 540, 16	1 273, 733	71, 378	35, 714114	1001	157 1, (, 08564, 000	01323, 3401208, 65	208, 655

Forest Service.
This table reports only the flood control work of the C. C. C. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1834.

Table 515.—Emergency Conservation Work: Erosion-control work completed Apr. 5. 1933-Mar. 31, 1934

State	Erosion camps	Dams	Land benefited	Bank protection	Ditches
	Number 1	Number	Acres	Sq. yd.	Linear yd.
Alahama		3, 392	21, 305	178, 912	windar ya.
Arizona		46, 566	29, 156	46, 046	
California		405	6,940	404, 364	7, 190
Colorado		40, 980	27, 764	27, 410	
Georgia			120	500	
Idaho		2			
Illinois	9	17, 462	50, 371	2, 223, 205	1, 222
Indiana	9	43, 462	24, 245	98, 008, 434	11, 284
Iowa	11	23, 144	178, 095	8, 598	
Kansas	5	589	979		
Kentucky		5, 643	7,396	1, 083, 587	13, 575
Louisiana			5	2,000	
Maryland		8			
Michigan			93 36, 956	20, 752 7, 869	1, 432
Minnesota		1, 954		4, 950, 412	
Mississippi		105, 497 1, 222	45, 381 24, 808	21, 024	
Missouri		1, 222	24, 808	21,024	6, 266
Montana		660	16, 514	13, 235	0, 200
Nebraska		000	16, 514	10, 200	
Nevada New Hampshire			75		
New Mexico		41, 399	38, 531	2,600	
New York		41,000	00,001	4,000	
North Carolina		4, 974	4, 316	34, 204	
Ohio		10, 281	12, 611	886, 901	6, 559
Oklahoma		3, 918	33, 490	90, 111	0,000
Oregon		467	63		
Pennsylvania			13		
South Carolina		1,651	360		
South Dakota	. 1	201	57	500	
Tennessee		49, 227	39, 526	563, 003	
Texas		3,435	28, 810	1,303	
Utah		205	5, 041		
Washington			. 5		
Wisconsin	_ 4		5, 729		
Wyoming	-	321	1,361		
United States	114	407, 065	640, 132	109, 298, 970	47, 528

¹ Average number of camps. Many other camps under Forest Service supervision did considerable erosion-control work.

Forest Service.
This table reports only the erosion-control work of the C. C. C. camps under the supervision of the Forest Service of the Department of Agriculture. For a similar report of the entire number of camps, see the second report of the Director of Emergency Conservation Work, 1934.

Table 516 .- Turpentine and rosin: Industrial consumption, United States, average 1927-31, annual 1932 and 1933

		Turpentine			Rosin	
Industry	Average 1927-31	1932	1933	A verage 1927-31	1932	1933
Automobiles and wagons	48, 388 52, 151 3, 632 4, 234, 556 13, 039 63, 070 46, 361	Gallons 33, 245 32, 495 5, 750 2, 539 30, 960 20, 324 1, 686 2, 280, 214 22, 635 36, 262 34, 188 549, 282 8, 733	Gallons 42, 628 37, 394 10, 284 10, 110 41, 511 10, 067 1, 446 2, 568, 241 19, 465 31, 286 25, 566 575, 793 5, 634	500-lb. barrels 1, 831 5, 337 17, 881 38, 361 2, 922 3, 477 47, 808 332, 188 221, 249 14, 581 30, 859 829 691 214, 085	500-lb. barrels 773 3, 028 3, 663 16, 003 2, 749 770 21, 399 261, 000 121, 240 10, 225 11, 559 108 290 261, 350	500-lb. barrels 1, 505 3, 889 1, 670 19, 530 3, 160 3, 045 30, 634 320, 340 168, 640 11, 677 11, 519 399 850 264, 173
Total	5, 230, 740	3, 076, 293	3, 369, 405	932, 099	714, 657	841, 271

Bureau of Chemistry and Soils.

TABLE 517.—Turpentine and rosin: Stocks on hand and en route in the United States as of Mar. 31. average 1928-32, annual 1933 and 1934

		Turpentine			Rosin	
Location	A verage 1928-32	1933	1934	A verage 1928-32	1933	1934
Gum turpentine stills	Gallons 1 548, 781 475, 827 5 27, 427 6 11, 103 2, 902, 494 359, 060 754, 962 110, 980 1, 175, 686	Gallons (2) 659, 920 30, 166 40, 302 3, 810, 845 366, 532 648, 341 117, 217 606, 485	Gallons 3 799, 406 983, 887 62, 743 76, 907 2, 581, 712 391, 403 764, 129 130, 694 927, 604	500-lb. barrels 1 105, 920 106, 945 	500-lb. barrels (2) 101, 811 272, 830 15, 275 12, 348 1, 260 303, 866	500-lb. barrels 3 201, 651 88, 200
Total	6, 366, 320	7 6, 279, 808	6, 668, 485	733, 218	7 707, 390	889, 542

Bureau of Chemistry and Soils.

TABLE 518.—Turpentine and rosin: Exports and imports, United States, average 1927-28 to 1931-32, annual 1932-33 and 1933-34

	Turpentine	(years begin	ning April)	Rosin (y	ears beginnin	ng April)
Item	A verage 1927–28 to 1931–32	1932–33	1933-34	A verage 1927–28 to 1931–32	1932–33	1933–34
ExportsImports	Gallons 15, 319, 234 343, 509	Gallons 11, 252, 781 453, 982	Gallons 15, 010, 054 500, 159	500-lb. barrels 1, 288, 426 2, 652	500-lb. barrels 1, 089, 294 1	500-lb. barrels 1, 298, 725 3, 617

Bureau of Chemistry and Soils; compiled from Department of Commerce reports.

¹ For 1928, 1930, and 1932; data not available for other years.
2 Data not available.
3 Stocks as of Dec. 1, 1933; reported by Bureau of the Census.
4 Compiled from Hercules Powder Co. reports.
5 Data not available for 1928; average for 4-year period.

⁶ For 1931 and 1932 only; data not available for other years.
7 Exclusive of quantities at gum turpentine stills.

Table 519.—Hunters' licenses issued by States, with money returns, for the seasons 1932 and 1933 $^{\rm 1}$

			Licenses	issued				
State	Resi	dent		sident alien	To	tal	Money	returns
	1932	1933	1932	1933	1932	1933	1932	1933
Alabama Alaska Arizona 3 Arizona 3 Arkansas California 3 Colorado Connecticut Delaware Florida Georgia Idaho Illinois Indiana Iowa Kansas Kentucky Louisiana Maine Mayland Massachusetts Michigan Minnesota Mississippi Missouri Motana Nebraska New Hampshire New Jersey New Hampshire New Jersey New Hampshire New York North Carolina North Carolina North Carolina North Carolina Ohio Oklahoma Oregon Pennsylvania Rhode Island South Carolina South Carolina South Carolina South Dakota Ternessee Teras Utah Vermont Virginia Washington West Virginia Washington West Virginia Wisconsin Wyoming	41, 208 43, 745 30, 418 465, 368 302, 458 4281, 621 4242, 901 107, 330 70, 610 75, 811 4108, 205 61, 155 4107, 166 258, 459 216, 985 4170, 275 4187, 544 45, 344 45, 348 450, 868 537, 813 68, 581	Number 54, 042 (2) 2 20, 067 41, 512 153, 375-5 4 71, 208 4 27, 769 4 1, 128 38, 400 5 39, 227 4 63, 938 280, 525 4 340, 386 4 225, 029 73, 897 74, 99, 519 62, 078 673, 308 4 183, 926 4 183, 926 4 183, 926 4 183, 926 4 183, 926 5 107, 696 4 14, 873 4 520, 23 4 82, 305 4 107, 696 4 14, 873 4 520, 23 6 5, 966 4 377, 335 6 5, 966 4 377, 335 6 91, 858 4 50, 52 4 44, 463 4 47, 935 5 69, 224 4 47, 935 6 91, 224 4 126, 668 8 85, 000 4 33, 177 4 125, 024 4 126, 668 4 144, 757 184, 142	153 176 3 150 2 156 8 600 194 4 451 852 2133 843 258 89 4, 949 1, 721 578 129 4 326 4 1, 130 8 347 672 4 1, 130 8 341 7 67 9 342 5 154 1, 190 9 3 12, 190 12,	Number 127 898 4 258 1706 4447 711 3223 4 155 699 131 195 896 3, 561 1, 077 424 459 453 656 577 4, 966 1, 335 714 966 1, 335 714 968 1, 1082 4 322 173 2 173	Number 72, 424 176 18, 150 200, 600 94, 906 628, 634 1, 293 44, 907 30, 636 65, 681 303, 301, 301, 251, 879 243, 907 112, 254 62, 102 108, 837 75, 900 112, 254, 937 255, 937 217, 144 27, 926 6, 937 217, 144 27, 926 6, 937 217, 144 27, 926 6, 937 217, 144 287, 926 6, 937 217, 144 287, 926 6, 937 217, 144 287, 926 6, 937 217, 144 287, 926 6, 937 217, 144 287, 926 6, 937 217, 144 20, 937 217, 144 287, 926 6, 937 217, 144 287, 926 6, 937 217, 144 287, 937 217, 144 237, 937 217, 9	Number 54, 159 89 20, 325 42, 237 154, 031 74, 378 328, 216 1, 199 38, 227 64, 325, 340, 541 225, 086 63, 155 674, 227 103, 080 63, 155 674, 227 399, 090 253, 297 82, 822 83, 822 108, 573 115, 697 523, 402 397 92, 293 397 92, 293 82, 825 83, 125 125, 127, 596 66, 622 37, 392 39, 106 69, 938 48, 002 253, 552, 502 505 50, 500 509, 106 69, 938 48, 002 253, 555 50, 550 550 550, 550 550, 550 550	Dollars 95, 353, 25 10, 620, 00 48, 750, 00 86, 751, 30 400, 000, 00 215, 133, 00 96, 740, 00 2, 494, 72 104, 438, 00 50, 231, 70 128, 664, 20 238, 488, 50 248, 447, 00 242, 239, 70 61, 238, 50 78, 661, 238, 50 78, 661, 238, 50 78, 661, 238, 50 78, 661, 238, 50 78, 661, 238, 50 113, 240, 00 113, 240, 00 113, 240, 00 115, 527, 50 122, 537, 50 122, 537, 50 123, 546, 60 96, 900, 00 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 007, 484, 19 1, 008, 222, 50 1, 007, 484, 19 1, 008, 222, 50 1, 098, 222, 50 1, 098, 222, 50 1, 098, 221, 50 1,	Dollars 68, 788, 65 5, 130, 00 55, 612, 00 55, 612, 00 100, 718, 00 2, 483, 159, 15 173, 692, 00 100, 718, 00 224, 318, 00 224, 318, 00 224, 062, 002, 00 61, 361,
Total		\$ 16, 943 5, 702, 061	36, 946	4 345 36, 947	19, 755 5, 776, 634	17, 288 5, 741, 965	61, 095. 85 9, 122, 699. 10	68, 265, 00

Biological Survey.

Figures are for the fiscal year or season ended during the year named.
 None required.
 Estimated for 1932.
 Combined hunting and fishing license, or State and county license, or large- and small-game license.
 Includes both resident and nonresident licenses, no separate record having been kept.
 Includes 5,397 free licenses.
 Correction of error in 1932 figures.

TABLE 520.—Mileage of roads in State highway systems, including Federal-aid system, at end of 1933, and total mileage 1921, 1923-32, as reported by State highway departments:

		Earth surfa				Surfa	ced roads	by typ	oes		
State and year	Total system mileage	Unim- proved	Im- proved to grade	Total sur- faced mileage	Sand- clay, top- soil	Gravel, chert, etc.	Water- bound mac- adam (treat- ed and un- treat- ed)	Bitu- mi- nous mac- adam	Bitu- mi- nous con- crete	Port- land ce- ment con- crete	Brick and block
Alabama Arizone. Arizone. Arizone. Arizone. Arizone. Arizone. Arizone. Arizone. Arizone. Colorado Colorado Connecticut Delaware. Filorida. Georgia. Idaho. Illinois. Indiana. Iowa. Kansas. Kentucky. Iouisiana. Maine. Maryland. Massachusetts. Michigan. Minnesota. Mississippi. Missouri. Montana. Nebraska. Newada. New Hampshire. New Jersey. New Mexico. New York. North Carolina. North Dakota. Ohio. Oklahoma. Oregon. Pennsylvania? Rhode Island. South Carolina. South Carolina. South Dakota. Tennessee. Texas. Utah. Vermont. Virginia Washington. West Virginia? Wissonsin. Wyoming.	1, 872 10, 377 13, 933 10, 148 17, 604 11, 884 17, 426 1, 086 1, 086 1, 086 1, 097 19, 73 19, 73 1, 101 1,	2, 965 3, 458 1, 003 408 3, 695 5, 455 66 	122 41 187 190 554 187 190 58 32 25 1, 838 27 636 662 457 2, 292 1, 280 662 4, 281 662 4, 281 662 4, 281 662 4, 281 662 662 662 662 662 662 662 662 662 66	5, 891 2, 802 1, 142 5, 135 4, 759 8, 342 5, 886 11, 672 2, 021 1, 672 2, 021 1, 782 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 1, 732 2, 211 2, 211 2, 211 2, 211 2, 212 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	888 1, 336 40 2, 296 88 72 1, 582 1, 582 2, 644 21 1, 583 1, 583 1, 583	282 224 25 761 2, 988 11 2, 588 3, 222 1, 974 3, 462 9, 474 1, 539 4, 584 6, 993 2, 152 2, 363 3, 333 3, 314 2, 3, 302 2, 545 2, 3, 302 3, 3, 396 7, 4, 554 2, 545 2,	1, 321 1, 032 1, 116 145 454 10 94 53 476 3, 619 92 43 43 3, 619 92 43 43 3, 619 92 43 43 3, 619 92 43	12 267 161 963 868 	254 14 1, 693 1, 064 1, 171 275 683 746 116 445 607 1, 771 89 76 76 54 27	2, 658 30 2, 721 1, 719 248 6, 329 1, 942 1, 83 1, 303 271 73 1, 336 1, 296 4, 177 8	2 6 8 316 100 2500 104 288 3162 5 6 2 2 1 1 3 111 8 133 139 51 111 1,459 39 541 111 1,459 39 541 111 1,459 39 541 111 1,459 39 11 1,459 39
Total: 1932 1931 1930 1930 1928 1928 1927 1926 1925 1924 1923 1921	358, 21	72, 742 2 61, 313 8 69, 916 3 77, 253 2 81, 543 3 86, 813 9 103, 277 6 94, 65 1 103, 843 2 102, 963		208, 00 5 193, 133 0 176, 56 3 163, 05 5 144, 85 5 132, 10 8 111, 40	13, 49 6 12, 58 9 11, 39 4 11, 02 9 10, 44 0 8, 87	3 123, 876 22 112, 800 3 107, 27 2 98, 94 9 93, 12 1 86, 09, 5 69, 79, 28 6 63, 15 5 52, 91	19, 297 10, 15, 157 7, 20, 229 7, 18, 891 4, 18, 142 5, 17, 752 6, 18, 428 11, 033 7, 15, 425	15, 356 14, 590 14, 054 2 15, 200 2 13, 496 3 12, 927 9 12, 105	8,071	36, 916 31, 936 27, 641 22, 825 3 17, 916	3, 268 7 3, 326 5 3, 326 3 3, 381 5 3, 185 5 3, 090 5 2, 865

Includes municipal streets connecting State highways in a majority of States.
 Includes secondary State system.
 Includes 1,008 miles of miscellaneous surfacing not allocated by types.

Table 521.—Total State highway income and funds available, 1933, as reported by State authorities

						,				
			Total	Curr		nue from irces	State	Contril from oth State s		Loans
State	Total funds avail- able	Bal- ances at first of year	income for State high- ways	State taxes and ap- propri- ations	Motor- vehicle fees		Miscel- laneous revenue	Federal payments and advances	Trans- fers from local govern- ment units	State high- way bonds and notes sold
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Alabama		218	10, 765	aona. o	2, 150	3,757	247	4, 610		
Arizona	5,770	61	5, 709	473	647	1,649	52	2, 888		
Arkansas	7, 913	-2,825	10, 738		1,660	4,821	258	3, 999		
California	48,568	9,717	38, 851	4,348	3,363	23,850		7, 109	181	
Colorado	9,971	1,356	8,615	387	215	3,664	89	4, 260		
Connecticut		3,511	12, 146		6,600	4,500	177	569	300	
Delaware	4, 480	1,029	3,451	1,000	997	1,035	17	402		
Florida	16, 108	533	9,625		1, 121	6,063	23 23	3, 392	145 281	
Tdoho	10,011	1,731	14, 280 5, 579	331	135	7,790 2,247	17	5, 065 2, 774	75	
Tinnis	57 699	15, 116	42, 583	24	15, 273	19,742	108	7, 271	165	
Indiana 1	17, 106	6, 595	10, 511		2, 430	6,610	198	1, 223	50	
Iowa		3.084	19,838		2, 430 9, 909	5, 290	i	3, 828		810
Kansas	1 15, 092	2,762 718	12,330 17,309		1,357	5, 693	13	5, 122	145	
Kentucky Louisiana	18, 027	718	17,309	732	1,357 2,623	8,374	869	4, 548	163	
Louisiana	1 97 7KU	2,885	24,884		4, 163	6,434	710	3, 572	5	10,000
Maine Maryland Massachusetts Michigan	13, 296	1,246	12,050		2,755	4,010	231	2, 995	1, 103	956
Maryiana	10,411	2, 275 6, 384	13, 136 17, 344	2,702	2,385 4,216	6, 210 8, 877	266 369	1, 425	148	
Michigan	20, 120	277	29, 306		8, 055	14, 691	505	3, 375 5, 557	507 498	
Minnesota	19, 533	1,670	17, 863	1,556	5, 649	6, 559	230	3, 869	430	
Mississippi 3	7, 667	197	7,470	2,000	107	2,629	17	4, 519	198	
Mississippi Missouri Montana	37, 393	8, 114	29, 279	9	8,889	9,028	677	5, 553	37	5, 086
Montana	7,645	39	7,606			2,578	24	4,979	25	
Neoraska	111. 338	449	11,549	50	577	5, 203		5, 701	18	
Nevada	1 7 7 18 1	-190	3,980	91	288	675	24	2, 582	20	300
New Hampshire	8, 438 39, 442	763	7,675 22,985	109	2,011 9,765	2,650	164	586	255	1,900
New Hampshire New Jersey New Mexico	7, 979	16, 457 523	7, 456	6, 026 82	287	4,216 2,215	74 94	2,748 4,190	88	156 500
New York	73,887	44,002	29, 885	6, 527	4,876	3, 599	6	7, 847	324	6,706
North Carolina	23, 293	611	22, 682		4, 791	14, 165	112	3, 614		0, 100
North Dakota	5, 464	576	4,888		110	1,210	145	3, 114	209	100
Ohio Oklahoma	1 28, 221	2,846	25, 375		3, 911	15, 191	244	5, 896	133	
Oklahoma	13, 229	1, 157	12,072		1,781	5, 137	130	4, 888	136	
Oregon	13, 896 86, 565	1,292	12,604		2, 249	5,954	21	2,724	195	1, 461
Pennsylvania Rhode Island South Carolina 3	5, 531	17, 627 766	68, 938 4, 765		28, 288 2, 150	25,618	6, 161	8, 090	781	
South Carolina	8,849	3,432	5, 417		1, 127	1,770 2,524	43 428	802 1, 311	27	
South Dakota	0.192	227	4, 965		421	1 261	13	2, 670		
Tennessee	22, 296	8, 309	13, 987	267	2, 207	6, 793	702	4,018		
TexasUtah	44,677	11,468	13, 987 33, 209		4,665	14,616	421	12, 221	1, 286	
Utah	6, 424	276	6, 148	348	834	2, 120	30	2, 816		
Vormont	1 8 539	947	5, 585	784	2,015	1,818	81	773	114	
Virginia	21,672	2,687	18, 985		4,928	10,921	344	2,742	50	
wasnington	13, 962	-184	14, 146		2, 167	8,320	148	3, 248	263	
Wicconcir	16, 785 34, 190	3, 177	13,608	1,800	3,807	5,070	;;;-	2, 931		
Virginia Washington West Virginia Wisconsin Wyoming	4, 797	6,759 136	27, 431 4, 661	67	8, 190 671	12,611	115 215	4,617	1,898	
3		100	2,001		011	2,000	210	2, 611	41	
Total	955, 124	190, 860	764, 264	27, 713	176, 817	321, 414	14, 836	185, 644	9, 865	27, 975
			-	·	·	•	لـــــــــــــــــــــــــــــــــــــ			

¹ For 9-month period only. ² For 11-month period only. ⁸ For 6-month period only.

Table 522.—Total State highway and bridge disbursements, 1933, as reported by State authorities

								,		
		Ex	penditure	s for Sta	te highw	ay purpo	oses	Other d State partn	lisbursen highw nents	aents by ay de-
State	Grand total dis- burse- ments	Total expend- itures	Capital invest- ment in con- struc- tion and right- of-way	Main- tenance	Equip- ment and ma- chinery	Miscel- laneous ex- penses	Interest on bonds	Retire- ment of bonds	Trans- fers to coun- ties	Other dis- burse- ments
AlabamaArizona ArkansasCalifornia ColoradoConnecticut Delaware	5, 491 7, 274 37, 594 9, 696 11, 788 4, 138	1,000 dollars 9,411 5,239 6,735 35,696 7,970 8,554 2,988	1,000 dollars 5, 202 4, 039 3, 922 26, 791 6, 342 5, 193 2, 235	1,000 dollars 1,477 918 1,584 6,123 1,315 2,756 273	1,000 dollars 244 248 251 208 71 1 —199 35	1,000 dollars 398 34 	1,000 dollars 2,090 978 2,574 205	1,000 dollars 1,120 	1,000 dollars 	1,000 dollars 180 252 539 61 259 138
Florida Georgia Idaho Illinois Indiana ² Iowa	9, 126 14, 537 5, 193 40, 194 8, 800 18, 122	9, 083 13, 348 4, 714 36, 261 8, 800 16, 054	7, 145 11, 687 3, 607 26, 466 5, 083 8, 956	1, 731 928 923 3, 469 3, 559 2, 211 2, 738	207 733 86 183 158 458	383	98 5, 760 4, 428	393 2, 490 2, 068	634	25 1, 189 86 809
Kansas Kentucky Louisiana Maine Maryland Massachusetts	18, 169	11, 755 17, 788 16, 501 7, 173 10, 497 14, 855	8,154 11,472 9,730 4,089 7,165 9,687 16,380	2, 738 3, 975 2, 152 1, 869 2, 307 4, 787 4, 793	863 1, 818 288 1 —59 78 87	39 437 82 143 55	484 3, 894 1, 192 804 239	377 8, 624 908 1, 897 204	957 	166 4 656 138 51 297
Maine Maryland Massachusetts Michigan Minnesota Mississippi 8 Missouri Montana Nebraska	11, 124	14, 855 22, 273 14, 592 7, 551 31, 176 7, 480 11, 112 3, 706	9, 465 5, 636 22, 646 6, 251 8, 819	3, 035 1, 752 2, 693 1, 092 2, 205	144 163 1, 403 69 88		1, 100 1, 948 4, 434 68	1, 834 877 3, 000	1, 610 15	157 25 326
Nevada New Hampshire New Jersey New Mexico New York North Carolina North Dakota Ohio	28, 378	5, 700 5, 907 18, 437 6, 339 40, 910 11, 337 4, 809	3, 109 2, 882 12, 022 4, 713 25, 042 4, 734 3, 704	547 2, 695 2, 260 1, 173 9, 204 2, 138 1, 061	68 1 -98 1,337 1 -342 26	23 43 112 18	27 262 4, 253 410 5, 327 4, 695	126 575 3, 300 850 1, 200 3, 750	950 6, 641 4, 761 60	16 39 416 96 627 205
Ohio Oklahoma Oregon Pennsylvania Rhode Island South Carolina South Dakota	12, 660 66, 676	20, 673 14, 524 8, 797 59, 021 4, 268 4, 380	11,444 12,479 5,363 35,761 3,141 1,560	9, 155 1, 830 2, 109 13, 664 857 641	74 160 1 —123 4, 683 23	55 155 1,060 4 147	1, 293 3, 853 243 2, 023	1,975 6,052 1,891	1, 600 21 53	288 1, 582 1, 026 1, 854
South Dakota Tennessee Texas Utah Vermont Virginia Washington West Virginia Wisconsin Wyoming	4, 509 15, 357 40, 650 6, 084 5, 511	4, 408 14, 907 39, 515 5, 608 4, 612	3, 152 8, 131 28, 703 4, 142 2, 936 7, 835	1, 235 1, 449 10, 555 1, 157 1, 413	1, 252 257 1-40	15 73 24 437	4, 002 325 263 228	13 412 400	499 6, 519	15 437 1, 135 64
Washington West Virginia Wisconsin Wyoming	11, 032 13, 521 33, 112 4, 360	13, 450 8, 911 9, 861 19, 905 4, 171	6, 502 4, 968 15, 115 3, 241	4, 950 2, 209 2, 333 4, 777 753	175 157 13 1—15	25 19	2, 403 173	3, 660 3, 617 165	2, 121 6, 678	2, 912 24
Total		666, 062	446, 841	138, 830	15, 247	4, 623	60, 521	56, 309	42, 797	16, 838

¹ Equipment rentals exceeded equipment expense.
2 For 9-month period only.
3 For 11-month period only.
4 For 6-month period only.

Table 523.—Motor-vehicle registration and revenues, by States, 1933, and totals for 1925-32, as reported by State authorities

Number Number 208, 361 176, 523 298, 885 408 4									
State All motor cars and trucks Passenger and trucks Passeng		Registe	ered motor v	ehicles		Dispo	osition of g	ross rece	ipts 1
Cars and roads Trucks and busses tractors and roads costs state tractors	State		Passenger		registra- tion re-		Constru maintena	ction, ace, etc.	road
Alabama				and road	ceipts		high-		and
Alabama					1,000				
Palaware	Alabama	206, 361	176 593	29, 838	2,724	141	987		dollars 1, 065
Palaware	Arizona.	89, 496 188 242	74, 927 155, 262	14, 569 32, 980		76			694
Palaware	California	1, 958, 807	1, 738, 720	220, 087	9,866	1,722	2,902	2, 902	2, 340
Palaware	Connecticut	266, 491 314, 751	239, 058 262, 187	27, 433 52, 564	2,036 7,851		6, 833	610	683
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Delaware	51, 099	42, 614	8, 485	1,014		799		215
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Georgia	279, 265 330, 147	234, 246 278, 935	51 919	4,995 1,036		898		4, 599
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Idaho	96, 255	81, 371	14 884	1,402	105	124	1, 173	
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Indiana	770, 069	653, 709	116, 186	6.468	269	2,751	1,030	2 9, 328
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Iowa	632, 292	562, 802	69, 490	10,696		9,905		356
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Kentucky	294, 547	262, 436	32, 111	4, 174	236	3, 387		
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Louisiana	232, 688	190, 681	42,007	4,053	131	3,602		320
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Maryland	313, 274		34, 728	3, 581	559	2, 115	l	2 907
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Massachusetts	789,788	689, 934	99,004	6,508	1,512	2,402	764	2 1,830
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Minnesota	679, 243	580, 113	99, 130	6,367	298	2,806	l	3, 263
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Mississippi	164, 688 698, 362	131, 764 594, 567	32, 924 103, 795	1,870			1,668	
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Montana	110, 245	82, 765	27, 480	1,070	43		1,027	
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	Nepraska Nevada	390, 651 28, 324	336, 704	53,947 5,927	1,722	72 43	495 82	1, 155	175
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	New Hampshire	107, 631	87, 759	19,872	2, 167	97	2,070		
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	New Mexico	76, 643	61, 353	15, 290	867	1, 548	287	93	4, 130 194
Öhio 1,554,314 1,396,125 158,169 17,673 500 3,805 10,014 23,35 Oklahoma 451,712 385,755 65,957 3,382 1771 1,282 1,754 41,7 1,71 1,282 1,754 41,7 1,74 41,7 1,72 207,202 32,208 5,337 283 2,069 1,149 1,83 1,415,522 219,407 29,185 3,882 16,988 1,49 1,83 1,449 1,78 2,188 292 853 53 1,49 1,83 1,88 292 853 53 1,99 50uth Dakota 160,249 146,485 22,764 1,49 1,99 53 283 1,123 1,99 1,99 1,99 1,137 1,33	New York	2, 240, 757	1, 942, 249	295.005	42,318	3, 396	8, 475	5, 765	2 24, 682
South Carolina 162, 735 144, 940 17, 795 2, 503 69 437 1, 90 1, 905 1, 90		153, 889	128, 547	25, 342	1,382	93	14		2,735 1,100
South Carolina 162, 735 144, 940 17, 795 2, 503 69 437 1, 90 1, 905 1, 90	Ohio	1, 554, 314	1, 396, 125	158, 189	17,678		3,805	10.014	2 3, 353
South Carolina 162, 735 144, 940 17, 795 2, 503 69 437 1, 90 1, 905 1, 90	Oregon	239, 410	207, 202	32, 208	5, 337	283	2,069	1, 149	1,836
South Dakota 169, 249 146, 485 22, 764 1, 459 53 283 1, 123 1, 99 South Dakota 169, 249 146, 485 22, 764 1, 459 53 283 1, 123 1, 17 Tennessee 312, 180 278, 332 33, 848 2, 940 120 1, 337 1, 337 14 Texas 1, 201, 762 1, 183, 086 188, 676 12, 748 633 3, 899 8, 216 Utah 100, 362 44, 014 16, 348 798 60 Vermont 73, 576 65, 652 7, 924 2, 073 112 1, 438 270 25 Virginia 344, 704 283, 048 56, 656 6, 090 615 5, 475 Washington 427, 406 364, 838 62, 548 2, 433 410 1, 401 511 3 16 West Virginia 226, 985 193, 570 33, 415 3, 838 149 West Virginia 26, 985 193, 570 33, 415 3, 838 149 West Virginia 149, 790 133, 048 16, 742 662 85 Total 1832 24, 114, 977 20, 883, 625 3, 226, 746 301, 315 23, 316 119, 618 61, 379 270, 00 193 Total: 1932 24, 114, 977 20, 883, 625 3, 231, 352 324, 274 17, 551 155, 912 75, 964 74, 94 1931 25, 814, 103 22, 348, 023 344, 338 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 080 344, 383 19, 680 200, 734 70, 043 53, 71 1930 26, 545, 281 22, 059, 262 3, 486, 08	Pennsylvania Rhode Island	1,635,019	1.415.522	219, 497	29, 185	3,882	16,988		8,315
Soluth Dakots	South Carolina	162, 735	144, 940	17, 795	2,503	69	437		1,997
1, 201, 762			146, 485 278 332	22,764	1 7.450	120	283	1, 123	
West Virginia 226, 985 935, 770 33, 415 3, 835 410 1, 401 511 316	Texas	1, 201, 762	1, 013, 086	1 188, 676	12,748	633	3,899	8, 216	
West Virginia 226, 985 935, 770 33, 415 3, 835 410 1, 401 511 316	Vermont	73, 576	84, 014 65, 652	7, 924	2,073		1, 438	270	738 253
West Virginia 228, 985 193, 870 33, 415 3, 838 149 4, 009 2, 213 3, 68 Wisconsin 670, 797 566, 450 104, 347 9, 768 768 4, 009 2, 213 2, 277 Wyoming 52, 560 41, 917 10, 643 679 13 500 13 500 12, 77 16, 742 6626 85 19, 19 16, 742 6626 85 19, 19 18, 22 18, 22 18, 22 18, 22 18, 22 18, 22 18, 22 19, 19 18, 22 19, 19 19	Virginia	344, 704	288, 048	56,656	6,090	615	5,475		
Wisconsin	West Virginia	226, 985	193, 570	33, 415	2, 483 3, 838	149	1,401	511	3 689
Total, 1933 23, 827, 238 20, 600, 542 3, 226, 746 301, 315 23, 316 119, 618 61, 379 *97, 00 Total: 1932 24, 114, 977 20, 883, 625 3, 231, 352 324, 274 17, 551 155, 912 75, 964 74, 84 1931 25, 814, 103 22, 348, 023 3, 486, 080 344, 338 19, 689 200, 734 70, 043 53, 87 1930 26, 545, 231 23, 059, 262 3, 486, 019 355, 705 19, 197 222, 147 68, 578 45, 78	Wisconsin	1 670, 797	566, 450	104, 347	9,768	768	4,009	2, 213	2,778
Total: 1932	District of Columbia.	149, 790	133, 048	16, 742			500		2 541
1932	Total, 1933 Total:	l	1	1	1	1	1	61, 379	³ 97, 002
1930	1932	24, 114, 977	20, 883, 625	3, 231, 352	324, 274		155, 912	75, 964	74, 847
1929	1930	26, 545, 281	23, 059, 262	3, 486, 019	355, 705	19, 197	200, 734	68, 578	45, 783
1927 23, 133, 241 20, 219, 223 2, 914, 018 301, 061 18, 876 189, 985 53, 578 42, 62 1926 22, 001, 393 19, 237, 171 2, 764, 222 288, 282 16, 602 191, 111 51, 702 28, 88 1925 19, 937, 274 17, 496, 420 2, 440, 854 260, 620 11, 993 177, 707 48, 396 22, 62		26, 501, 443	23, 121, 589	3, 379, 854	347, 844	17, 403	223, 293	66, 861	40, 287
1926	1927	23, 133, 241	20, 219, 223	1 2,914,018	301,061	14,876	189, 985	1 53, 578	38, 217 42, 622
27, 500, 217 11, 120, 120 2, 120, 001 200, 020 11, 855 111, 101 48, 596 22, 52	1926 1925	22,001,393	19, 237, 171	2,764,222	288, 282	16,602	191, 111	51,702	28, 867
	1000	-3, 001, 214	14, 100, 120	2, 770, 004	200, 020	11, 555	177, 707	20, 096	22, 524

These figures are not comparable with those on highway income table.
 Includes amount allocated to city streets.
 Includes \$10,319,000 to city streets.

Table 524.—Gasoline taxes, by States, 1933, and totals for 1925-32, as reported by State authorities

		D	isposition	of total tax	ces collecte	đ		
State	Total tax (refunds	Collec-	Construc	tion, etc.	State and	Miscel-	Gallons consumed by motor	Tax rate per
	deducted)	tion	State high- ways ¹	Local roads	county road- bond payments	laneous and city streets	vehicles	gallon
Alabama	1,000 dollars 8,033	1,000 dollars 18	1,000 dollars 2,508	1,000 dollars 4,002	1,000 dollars 1, 505	1,000 dollars	1,000 gallons 133,886	Cente 6
Arizona Arkansas California	2,679 5,998 35,217	220 82	1,608 1,376 22,817	924 640 12, 037	3, 446	147 316 2 281	53, 581 114, 792 1, 173, 905 133, 125	5 6 3
Colorado Connecticut Delaware	5, 325 4, 857 1, 130	61	3, 685 4, 857 851	1, 421	279	2 158	133, 125 240, 581 37, 578	4 2 3 7 6
Alabama Arizona Arkansas California Colorado Connecticut Delaware Florida Georgia Idaho Ilinois Indiana	14, 293 12, 635 2, 283	21 63 12	6, 107 8, 381 2, 055	2, 095	6, 107 216	2, 058 2, 096	203, 562 210, 575 45, 647 927, 767	7 6 5
		133 71 59	18, 467 8, 109 3, 375	5, 468 6, 487 3, 838	2, 100	3, 765 ² 1, 622	407, 080 312, 411	3 4 3
Iowa Kansas Kentucky Louisiana Maine Maryland Massachusetts Michigan Minnesota Mississippi Missouri Montana Nebraska Nevada	7, 771 8, 316 8, 155	179 48 62	5, 779 8, 268 2, 361	1,800	4, 101	13 1,631	257, 727 166, 293 163, 139	53433554
Maine Maryland Massachusetts	4, 127 7, 208 16, 377	16 17 50	2, 056 5, 385 6, 517	2, 055 7 2, 074 14, 045	314	3 1, 799 7, 422	102, 009 180, 194 545, 912	4 4 3
Michigan Minnesota Mississippi	19, 485 10, 214 6, 101	110 23 56	2, 303 6, 425 2, 875	3, 600 2, 573	3,000 495	27 189 135	648, 615 333, 829 96, 695 454, 057	4 3 3 3 6 2
Missouri Montana Nebraska	9, 081 2, 751 7, 706 696	32 56	9, 025 2, 650 5, 096 696	2, 299	69	2 255	55, 026 192, 656	5
Nevada	2, 350 16, 471 2, 282	53 34	1, 762 2, 438 898	6, 397	588 2, 296 1, 350	5, 287	17, 391 58, 746 546, 580 45, 310	44435363445326
New York North Carolina North Dakota	2, 282 43, 393 14, 773 1, 925	141 6 25	21, 647 4, 953 1, 267	5, 761 2, 931 633	6, 540	2 15, 844 343	45, 310 1, 444, 838 246, 160 64, 132	3 6 3
Ohlohama	10 070	153 65 21	15, 427 4, 995 4, 604	7, 641 2, 419	1,719	³ 10, 719 2, 600	838, 020 251, 617 135, 820	4 4 5
Oregon	31, 060 1, 885 6, 679	350	22, 142 1, 247 1, 924	5, 111	3, 457 302 3, 642	336	1, 024, 637 94, 049 111, 322 78, 382	3 2 6
Tennessee Texas	3, 346 12, 980 28, 479	41 155 201	1,900 3,481 14,139	3, 848	5, 496 7, 070	1,405 7,069	78, 382 185, 427 711, 984 54, 725	4 7 4
South Dakota Tennessee Texas Utah Vermont Virginia Washington West Virginia	2, 190 1, 766 11, 082 10, 863	25 23	2, 186 1, 321 7, 740 7, 971	230 3,317 2,000	215	869	44, 154 221, 641 217, 264	7 4 4 4 5 5
		12 30	1,759 9,255 829	3, 992 351	3, 157 1, 284 225	¹ 608	122, 992 379, 236 35, 135 104, 117	4 4
Wyoming District of Columbia. Total, 1933		2,728	277, 517	111, 109	58, 973	² 2, 082 ³ 69, 076	104, 117	4 3, 65
Total: 1932	514, 139	2,833 2,117	301, 788 354, 017 338, 927	94, 074 100, 074 96, 226 85, 113	50, 726 42, 488 31, 049	64, 718 38, 893 27, 379	14, 250, 173 15, 407, 650	4 3. 60 4 3. 48
1931 1930 1929 1928 1927	494.683	1, 102 778 695	297, 968	07, 381	23, 372 17, 620	24, 405 18, 492	15, 407, 650 14, 751, 309 13, 400, 180 10, 178, 345	4 3. 48 4 3. 35 4 3. 22 4 3. 00
1927 1926 1925	_ 1 187, 603	500 239 217	182, 096 129, 442 98, 605	55, 440 43, 609 31, 849	10, 086 5, 239 4, 333	10, 845 9, 074 11, 025	9, 366, 652 7, 883, 984 6, 457, 783	4 2. 76 4 2. 38 4 2. 26

These figures are not comparable to those shown on highway income table.
 Includes city streets.
 Includes \$13,334 to city streets.
 Weighted average.

Table 525.—Current status of United States Public Works road construction, provided in title II, section 204 of the National Industrial Recovery Act, as of June 30, 1984.

	Total apportion-		Completed	pç			Under construction	ıction		Approved for construction	for on
State	ment of Public Works funds	Total cost	Public Works funds	Regular Federal aid	Mileage	Estimated total cost	Public Works funds allotted	Regular Federal aid allotted	Mileago	Public Works funds allotted	Mileage
											1
A Tobomo	Dollars o 970 199	Dollars	Dollars	Dollars	Miles	Dollars	Dollars	9 037 043 54	370 0	1 808 471 75	N
Arizona	6, 211, 960	2, 046, 484, 71	2, 004, 382.	1 10° 000° 02	141.4	3, 339, 932, 74		ŧ į	196.5		
Arkansas	6, 748, 335	609, 101. 26	481, 665.	127, 435.95	32.4	4, 782, 355. 25		445, 578. 34	284.3		
California	15, 607, 354	5, 656, 013. 18			172.3	12,089,450.96		97 ASK	343,6		
Connectiont	2, 865, 740	6, 022, 151. 95 80, 124, 44	706'7		180.4	2, 896, 535, 29		178,920,82	54.4		
Delaware	1,819,088	274, 915, 09	286		8	1,083,829,70		į	18.4		
Florida	5, 231, 834	1, 916, 897. 59		526, 738. 21	23.3	4,007,779.72	3, 583, 473. 43	513, 696. 19	131.7		4, 5 w n
Georgia	10, 091, 185	1, 572, 745, 52	1, 572		20.2	9, 702, 627, 80			178.1		
Tilhols	17, 570, 770	740, 636, 64	.,		46.6	13, 621, 077, 74			377.6		
Indiana	8	40,616,63	40		1.2	7, 494, 686. 64			238.2		
Iowa	055	1, 999, 978. 66	1,936	1	147.3	7, 267, 687. 25			421, 2		
Kansas	8	2, 403, 085, 86	. 2388	*******	242.2	8,030,154,68			356.4		27.1
Kentucky	27,	1, 131, 158. 04	1, 126	1	131.8	4, 722, 349, 00			128 2		
Maine	800	720 956 65	25.		0.00	2, 509, 937, 71			8		
Maryland	564	22, 217, 70	ន		1.9	1, 769, 410. 69			62.5		
Massachusetts	697	386, 424, 52	88	92, 984, 24	8.2	6, 068, 468, 12		364, 735.	60.3		
Michigan	36,3	364, 350.00	364	40 907 00	11.4	10, 698, 825, 00		30,000.00	460.7		10.0
Mississimi	96	4,010,410.30	9,400	136, 773, 84	16.6	6, 026, 784, 62		2, 067, 000.	353.0		
Missouri	8	1, 958, 601. 48	1, 732,	1000	198.0	9, 644, 757. 95		68, 548.	542.0		
Montana	439	2, 484, 917. 43	2,304	100,000.00	200.2	5, 246, 316, 95		237, 025.	412.5		
Nebraska	88.7 80.7	2, 605, 201, 12	2,016,	2	297.8	6, 366, 062, 53			22.3		
New Hampshire	Š	134 671 58	134		2.8	1, 715, 129, 51			49.3		
New Jersey	34	160, 151, 25	160		8.2	5, 659, 697, 65					
New Mexico	792	2, 662, 688. 71	2,662	1	286.7	2, 782, 780. 24					
New York	330	1, 103, 667, 14	 	43,000.00	8,53	22, 989, 026, 28					
North Carolina	222	7, 316, 265, 85	1,890,	322, 943, 60	468.6	5, 392, 834, 10 9, 145, 185, 02		225, 863, 23			
Oblo	48	2, 141, 452, 27	2,096	of transfer	197.1	13, 863, 632, 43					
Oklahoma	216	1, 491, 881, 34	1, 489		112.2	6, 379, 056. 84		i	_		
Oregon	96	2, 488, 491. 83	2,302,	98, 444, 47	150.4	3, 548, 284. 40		128, 021. 20	153.5		25.8
Pennsylvania	g g	1, 292, 671, 11	1, 275,		01.3	15, 863, 939, 07		1	18.5		
Filode Island	ó	104, 441, 10	\$		0.4	7, UDO, UUZ, AO	_				

25,5 27,7 77,8 37,7 7,7 6,3 1,2 1,2 1,2 1,2 1,2 1,2 1,2 1,2 1,2 1,2	1, 718.2
468, 286. 22 834, 642. 10 1, 442, 646. 74 1365, 171. 70 137, 171. 70 886, 111. 72 886, 111. 72 886, 111. 72 886, 111. 72 886, 111. 72 886, 111. 72 886, 111. 72 886, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 111. 72 889, 112. 76	31, 148, 776, 25
360.5 4412.5 192.5 102.9 88.4 88.4 108.7 1131.1 3304.8 3304.8 3304.8 3304.8	13, 674. 4
3, 134, 63 307, 798, 82 361, 160, 19 1, 838, 96 119, 858, 30 64, 398, 24 85, 908, 67 261, 205, 82	8, 634, 305. 19
4,000,284,47 2,649,683,60 14,648,385,66 1,280,874,18 1,280,874,18 4,138,119 4,138,119 3,535,412,21 3,535,412,21 3,535,412,21 4,14,544,64 1,414,544,74 1,602,765,68	263, 042, 470. 96
4 013 419.10 2 957, 477.42 16, 500, 525.75 1, 500, 526.80 1, 332, 533.83 4, 500, 288, 525, 413.21 2, 554, 132.31 3, 554, 133.31 6, 7757, 332.31 1, 431, 648, 63 1, 808, 971.40	283, 506, 260, 40
28.0 28.6.2 28.6.2 28.6.2 26.7.2 14.9.3 28.0 29.3 29.3 5.0 6.0 6.0	6,985.7
19, 341.39 213, 062.30 18, 234.63 3, 366.82 1, 186.00 80, 400.00	2, 645, 084, 43
466, 522, 03 1, 433, 846, 17 1, 830, 674, 27 6, 836, 617, 91 2, 637, 560, 60 1, 972, 211, 64 2, 446, 222, 83 2, 316, 177, 28 2, 316, 177, 28 1, 418, 446, 69, 80 1, 418, 426, 69, 80 1, 41	73, 201, 990. 29 2, 645, 084. 43
466, 552, 06 2, 1683, 187, 66 2, 173, 527, 56 2, 675, 686, 173, 527, 188, 173, 527, 538, 539, 539, 539, 539, 539, 539, 539, 539	79, 774, 036. 09
5, 459, 115 24, 244, 024 4, 194, 738 4, 194, 738 4, 146, 777 6, 414, 287 6, 474, 283 1, 510, 483 1, 510, 483 1, 510, 483 1, 510, 483 1, 510, 483 1, 511, 603	394, 000, 000
South Carolina South Dakota Tonnessee Tonas Utah Vigina Washington Washington Washington Washington Washington Washington Washington Washington Utah Washington Washington Utah Washington Washington Washington Washington	Total 39

1 A table showing the current status of Federal-aid road construction has been published in previous Yearbooks but is omitted this year, since no Federal-aid authorization was made for the fiscal year ended June 30, 1934.

Table 526.—Annual average wage rate per hour for common labor employed on Federal-aid highway projects, 1924-33 and on Public Works highway projects, 1933-34

PEDERAL-AID PROJECTS!

Year	New Eng- land	Middle Atlan- tie	East North Central	West North Central	South Atlan- tic	East South Central	West South Central	Moun- tain	Pacific	United States
1924	Cents 49 46 49 49 49 51 50 45 35	Cents 43 43 47 47 43 43 42 37 36	Cents 40 37 38 39 39 39 39 36 36	Cents 36 37 36 37 38 37 38 37 37 35 32 29	Cents 28 27 29 28 26 28 25 21 19 21	Cents 24 25 25 25 26 26 24 20 19	Cents 27 26 27 26 27 30 28 31 28 23 26 28	Cents 40 44 44 45 46 47 47 45 44 47	Cents 58 52 52 53 53 53 53 54 48	Cents 38 38 38 40 41 39 39 36 32
		PU	BLIC	WORKS	PROJI	CTS 2				
1933 1984	40 43	40 41	47 50	. 45 . 44	31 31	30 30	35 35	55 55	56 57	44 42

¹ The volume of Federal-aid construction unaffected by the wage scales required on Public Works construction was so small in 1934 that average figures are not reported for that year.

2 For these projects it is required that minimum wage rates, sufficient to provide (for the hours of labor as limited) a standard of living in decency and comfort, shall be fixed by State highway departments.

Table 527.—Fertilizer materials: Sales and production of agricultural lime, phosphate rock, sulphur, and pyrites, in quantity and value, United States. 1931-33

		Quantity		Value					
Item	1931	1932	1933	1931	1932	1933			
Agricultural lime and liming materials sold: Lime from limestone: Quicklime Hydrated Lime from oyster shells Limestone pulverized Caleareous marl	Short tons 78, 392 218, 920 11, 207 1, 421, 050 25, 058	Short tons 71, 858 172, 716 10, 626 3 910, 430 11, 575	Short tons 84, 267 161, 843 3, 314 994, 540 10, 641	Dollars 422, 107 1, 502, 042 85, 884 2, 117, 141 65, 935	Dollars 343,501 1,023,270 44,688 31,230,542 28,000	Dollars 315, 566 1, 002, 681 22, 948 1, 239, 724 34, 865			
Total	1, 754, 625	1, 177, 205	1, 254, 605	4, 193, 109	2, 670, 001	2, 615, 784			
Phosphate rock sold or used: Sold for direct application to the soil	Long tons 21, 597	Long tons 7,033	Long tons 7,481			,			
Florida: Hard rock Land pebble ⁵ Tennessee: Brown and blue rock Other States ⁵	57, 224 2, 004, 242 343, 622 129, 871	57, 579 6 1, 412, 397 7 193, 666 43, 262	52, 382 2, 083, 741 7 333, 946 20, 243	380, 540 6, 821, 546 1, 545, 607 540, 792	373, 251 6 4, 406, 361 7 776, 367 182, 514	347, 324 6, 069, 786 7 1, 373, 392 81, 860			
Total	2, 534, 959	1, 706, 904	2, 490, 312	9, 288, 485	5, 738, 493	7, 872, 362			
Sulphur producted Sulphur sold Pyrites produced	2, 128, 930 1, 376, 526 330, 848	890, 440 1, 108, 852 189, 703	1, 406, 063 1, 637, 368 284, 311	924, 800, 000 974, 820	° 20, 000, 000 492, 043	9 29, 500, 000 755, 420			

¹ Sold by producers. (Includes a small amount sold by Hawaii and Puerto Rico producers.)

² Partly estimated.

³ Includes pulverized marble.

⁴ Sold or used by producers.

⁴ Includes soft rock.

Fincludes a small quantity of tailings.
Includes a small quantity of apatite from Virginia.
Includes Idaho, Wyoming, and Montana in 1931; Idaho and Montana in 1932 and 1933.

Approximate.

Bureau of Agricultural Economics; compiled from reports of the Bureau of Mines. Figures for earlier years appear in previous issues of the Yearbook.

Table 528.—Fertilizers: Production and value, by States, 1931; United States, 1931 and 1933

		Quar	ntity			Vali	116	
State	Complete fertilizers	Super- phos- phates ¹	Other fer- tilizers 2	Total	Complete fertilizers	Super- phos- phates ¹	Other ferti- lizers 2	Total
Maine Massachusetts Connecticut New York New Jersey Pennsylvania Ohio Indiana Illinois Maryland Virginia North Carolina South Carolina Georgia Florida Tennessee Alabama Mississippi Arkansas Louisiana Texas California Other States Undistributed Total Total Total 1931 adjusted 5	83, 590) 179, 081 116, 129) 237, 932 257, 932 75, 733 140, 844 407, 154 491, 885 579, 405 294, 734 635, 661 319, 432 107, 441 223, 372 76, 880 20, 669 90, 729 93, 300 54, 463 132, 208	(a) 40, 431 (b) (c) (d) 55, 656 105, 128 13, 135 42, 783 559, 560 94, 687 169, 118 132, 334 101, 683 96, 399 87, 744 (a) (b) (c) (d) (d) (d) (d) (e) (e) (e) (e) (e) (e) (e) (e) (e) (e	(3) (5) (8) (9) (9) (8) (9) (9) (9) (9) (10) (10) (10) (10) (10) (10) (10) (10	89, 443 162, 540 138, 358 244, 852 204, 075 382, 304 105, 040 220, 920 972, 476 648, 459 768, 145 431, 286 433, 644 223, 107 101, 277 23, 757 160, 822 54, 288 105, 003 248, 463 36, 967, 68	6, 442, 653 2, 008, 559 4, 009, 956 8, 912, 251 10, 454, 984 12, 386, 479 6, 019, 94 13, 797, 457 9, 413, 715 2, 207, 532 4, 884, 868 2, 344, 141 9, 273, 115 2, 379, 115 2, 379, 115 1, 3728, 919	957, 333 1, 700, 148 1, 342, 815 2, 551, 395 1, 131, 951 1, 161, 517 944, 034 (3) 642, 389 (3) 955, 374 1, 538, 047 20, 678, 216	(3) (4) (2) (7) (7) (8) (8) (8) (8) (8) (8) (9) (8) (9) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	16, 665, 305 10, 923, 233 3, 774, 510 5, 866, 836 2, 409, 225 641, 806 3, 261, 041 1, 319, 864 3, 943, 693 5, 381, 509
Total 1933 6	3, 273, 744	1, 545, 78	376, 43	5, 195, 96	2 61, 179, 998	12, 881, 737	8, 749, 218	82,810,953

Bureau of Agricultural Economics. Compiled from reports of the Bureau of the Census.

[!] Includes concentrated phosphates; basis 16-percent available phosphoric acid.

? Fish scrap, potash-superphosphate, bone meal and "other fertilizers."

3 Included in "undistributed", in order to avoid disclosing data for individual establishments.

4 States, which if shown separately, would disclose the operations of individual establishments. Certain States in this group, however, outranked some of the States shown separately.

5 Comparable with 1933 total.

6 Excludes data for the smaller manufacturers in the fertilizer industry and other establishments manufacturing fertilizer products.

Table 529.—Fertilizer: Consumption in the United States, by States, 1923-33

					Cale	endar y	ear t				
State and division	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933 2
Maine New Hampshire 3 Yermont Massachusetts Rhode Island 4 Connecticut New York New Jersey Pennsylvania	1,000 %hort tons 3 168 17 3 18 64 9 3 70 4 250 157 309	1,000 short tons 3 182 16 3 17 62 9 3 70 4 250 153 320	1,000 short tons 3 185 16 3 18 63 9 3 70 253 147 328	1,000 short tons 147 15 3 18 59 8 3 70 234 135 329	1,000 short tons 184 17 16 72 10 3 65 260 142 327	1,000 short tons * 179 17 17 71 10 * 72 * 260 144 340	1,000 short tons 186 512 15 569 58 369 5288 5162 5348	1,000 short tons 196 11 16 67 8 8 3 69 4 288 156 334	1,000 short tons 195 11 15 65 7 70 4 260 151 287	1,000 short tons 175 11 12 62 7 50 235 138 235	1,000 short tons 149 4 10 10 55 6 8 47 212 128 212
North Atlantic	1,062	1,079	1,089	1, 015	1,093	1,110	1, 157	1, 145	1,061	925	829
Ohio	303 198 17 84 15 47 44 52 45	321 192 17 95 15 48 45 47	322 226 25 109 12 4 9 3 6 64 3 4	305 228 25 105 16 11 7 6 57 8	313 240 4 26 117 23 11 7 7 56 4 8 1	321 221 31 4 150 33 14 8 10 65 9	339 250 38 4 153 41 5 16 5 21 59 6 10 2	327 224 41 4145 51 16 3 25 60 6 6	249 166 32 105 46 18 3 22 49 6 3	169 80 16 83 27 9 10 26 3	209 98 17 474 16 7 45 32 2
North Central	686	706	778	762	802	855	929	898	692	424	462
Delaware Maryland Virginia 6 West Virginia 4 North Carolina 6 South Carolina 6 Florida 6 Florida 6	37 155 422 40 1,066 693 676 398	36 151 442 40 1,183 844 679 365	41 165 452 41 1, 218 873 779 359	43 163 435 43 1, 218 840 780 399	41 173 408 44 1,171 727 713 417	41 165 438 50 1,349 788 883 469	5 43 5 180 430 5 46 1, 294 760 869 427	43 177 449 45 1, 242 749 929 489	36 146 379 40 1,003 599 686 419	33 125 280 35 696 446 357 381	28 133 308 32 889 582 416 353
South Atlantic	3, 487	3, 740	3, 928	3, 921	3, 686	4, 191	4, 094	4, 123	3, 308	2, 353	2, 741
Kentucky Tennessee 6 Alabama 6 Mississippi 6 Arkansas 6 Louisiana 6 Oklahoma Texas 6	90 106 448 208 80 105 4 4 79	85 115 457 206 97 125 4 4 128	93 142 598 258 123 111 3 5 101	92 156 615 278 126 114 3 6 125	70 112 478 219 75 93 3 4 81	90 151 681 333 126 144 6 8 145	93 143 675 328 157 174 6 9 192	114 164 644 404 158 176 6 7 145	105 119 420 197 62 94 6 7 65	55 63 205 85 17 49 6 3	58 77 287 104 22 61 6 2 34
South Central	1, 120	1, 217	1, 431	1, 512	1, 132	1,678	1,771	1, 812	1, 069	511	645
Washington Oregon California Other States	3 5 4 8 72 2	3 7 4 8 66 2	4 10 4 8 86 3	12 4 8 94 4	14 49 103 4	4 16 3 10 121 4	⁸ 21 ⁸ 12 130 ⁵ 10	4 22 8 12 142 10	4 18 3 11 132 15	9 10 127 10	8 10 113 5
Western	87	83	107	118	130	151	173	186	176	156	136
United States	6,442	6, 825	7, 333	7, 328	6, 843	7,985	8,079	8, 164	6, 306	4, 369	4,813

Except as follows: New Hampshire, Massachusetts, Idaho, and Oklahoma (1922-28), year ended June
 Rhode Island, year ended Mar. 31; New Jersey, year ended Oct. 31.
 Preliminary.
 Estimated by State authorities.

Bureau of Agricultural Economics; compiled from reports of the National Fertilizer Association, published in the Fertilizer Review; based on fertilizer tag sales or sale records, or estimates, as shown in footnotes.

⁴ Estimated.

⁵ Agricultural census.
6 Based on tag sales.
7 Total of 4 companies plus estimates for others.

TABLE 530.—Fertilizer and fertilizer materials: Production, sales, imports, exports, and consumption. United States, 1929-33

Item	1929	1930	1931	1932	1933 1
Sulphate of ammonia (equivalent of all forms): Production 23. Sales 23. Imports for consumption. Exports. Nitrate of soda, imports for consumption. Sulphuric acid:	Short tons 856, 214 827, 674 21, 338 162, 132 1, 042, 113	Short tons 769, 022 746, 031 39, 160 91, 461 643, 881	Short tons 569, 986 578, 475 127, 999 74, 930 616, 687	Short tons 356, 108 372, 243 344, 188 16, 511 56, 482	Short tons 420, 293 411, 920 393, 405 15, 968 137, 610
Production. Imports for consumption. Exports. Consumption 4. Superplosophate:	3, 480	2, 228, 588 459 2, 735 2, 476, 712	1, 427, 923 1, 172 1, 601 1, 351, 551	952, 581 749 1, 516 770, 592	1, 366, 973 1, 024 1, 206, 117
Production 4 Sales 4 5 Exports Potash:	1, 430, 700	4, 595, 096 1, 455, 259 125, 058	2,744,528 1,030,665 91,377	1, 765, 971 709, 074 26, 749	2, 694, 870 824, 176 39, 616
Production Sales Exports	101, 370	105, 810 98, 280 17, 042	133, 920 133, 430 32, 460	143, 120 121, 390 2, 034	333, 110 325, 481 28, 086
Imports (general), ⁶ from— Spain Germany Netherlands ⁷ France Belgium ⁸	543, 072 12, 804	25, 811 567, 382 29, 420	29, 897 306, 028 133, 577 3, 720	17, 725 187, 657 42, 691 5, 364	66, 564 221, 562 100, 920 6, 116
Other countries	548	309, 417	54, 116 1, 455	28, 866 5, 235	22, 120 8, 288
Total Imports for consumption: Kainit. Manure salts Muriate of potash	85, 042 437, 727 258, 682	933, 325 125, 455 405, 215 306, 047	61, 750 200, 600 202, 204	55, 299 113, 038 87, 761	114, 228 126, 696 118, 203
Sulphate of potash Other potash-bearing substances Total	89, 051 706 871, 208	96, 608 613 933, 938	63, 663 547 528, 764	31, 440 393 287, 931	66, 444 503 426, 074

Bureau of Agricultural Economics; compiled as follows: Production and sales, sulphate of ammonia and potash from Bureau of Mines; sulphuric acid and superphosphate from Bureau of the Census; imports and exports from Bureau of Foreign and Domestic Commerce.

Table 531.—Nitrogen: World production of, contained in inorganic nitrogeneous materials, 1929-34

The state of the s	Quantity produced during year ended June 30									
Product	1929	1930	1931	1932	1933	1934				
Byproduct sulphate of ammonia Other byproduct ammonia ! Cyanamide. Synthetic sulphate of ammonia. Nitrate of lime. Other synthetic nitrogen ! Chilean nitrate of soda. Total.	413, 600 56, 100 211, 200 533, 500 149, 600 421, 300 539, 000	Short tons 466, 900 56, 500 290, 200 486, 300 143, 500 470, 000 510, 400 2, 423, 800	395, 600 34, 000 221, 000 384, 000 121, 600 432, 500 275, 000	331, 800 33, 000 148, 100 574, 400 86, 800 382, 600 187, 000	Short tons 283, 500 43, 500 185, 300 616, 000 130, 100 508, 300 77, 900 1, 844, 600	Shori tons 336, 500 49, 500 211, 700 594, 300 116, 600 563, 100 93, 700				

¹ Including ammonia products used for industrial purposes and ammonia in mixed fertilizers.

Preliminary.

Byproduct of coke ovens; production from other sources (coal, gas, bone carbonizing, etc.) is usual ss than 5 percent of the total production.

Includes ammonia liquor NH3 content converted to sulphate equivalent.

Fertilizer establishments only.

Bulk superphosphate. Superphosphate in base and mixed goods excluded.

Includes kainit, manure salts, sulphate of and muriate of potash.

Originated mostly in Germany.

Originated mostly in France.

Bureau of Chemistry and Soils. British Sulphate of Ammonia Federation (Ltd.), annual report. Fertilizers are included in this table under the final form as sold, so that, for example, cyanamide if concerted into sulphate of ammonia is included under synthetic sulphate of ammonia, or, if into ammophos, is included under other synthetic nitrogen.

TABLE 532.—Insecticides and funcioides: Production, sales, imports for consumption and domestic exports, 1928-33

Item	1928	1929	1930	1931	1932	1933
Arsenic, white:	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Production 1	28, 362, 000	33, 210, 000	34, 114, 000	34, 274, 000	25, 408, 000	21, 300, 000
Sales:2						
Refined	16, 230, 000	19, 646, 000	29, 308, 000	23, 964, 000	21, 016, 000	17, 536, 000
Crude	7, 304, 000	9, 446, 000	5, 542, 000	3, 590, 000	3, 950, 000	6, 058, 000
Imports for consumption	22, 305, 972	26, 314, 042	20, 942, 663	15, 581, 398	13, 764, 683	21, 116, 720
Calcium arsenate:						
Production		33, 064, 426		26, 128, 620		
Imports for consumption	1, 323		6, 359	40, 950	4, 500	11, 023
Exports	1, 178, 702	3, 139, 633	3, 177, 335	2, 145, 653	2, 533, 599	2, 585, 824
Lead arsenate:	1		ļ		i	
Production		30, 682, 379		37, 974, 038		
Imports for consumption		200	800			1,000
Exports	1,093,673	1, 563, 982	2, 270, 980	1, 788, 345	1, 189, 629	598, 699
Sulphate of copper:						
Production 3	44, 463, 000	40, 258, 860	36, 976, 403	35, 265, 409	24, 908, 525	25, 436, 881
Imports for consumption	3, 611, 844	5, 388, 743	5, 964, 378	2, 643, 741	3, 234, 058	46, 959
Exports	8, 666, 899	6, 419, 688	5, 061, 554	7, 190, 919	4, 132, 529	2, 749, 299
Tobacco extracts, exports 4	2, 386, 526	2, 294, 567	1, 929, 171	1, 542, 811	1, 315, 947	1, 447, 215
Sodium arsenate: Imports for						
consumption	12, 403	133, 539	94,051	9, 284	5, 763	4, 974
Prepared animal dips:	1		1		1	
Imports for consumption 5.	175, 055	208,770	174, 215	154, 530	62, 509	106, 751
Exports		2, 252, 644	1, 258, 139			
	ł			1		İ

¹ Byproduct from the mining of copper, lead, and iron ores. (Bureau of Mines.) The production for sale in the "Miscellaneous Chemical Industry," as reported by the Census, was 34,352,500 pounds in 1931 and 21,152,574 pounds in 1933, with some plants not reporting.

² Sales by producers. (Bureau of Mines.)

³ Copper industry only. (Bureau of Mines.) The production for sale in the "Miscellaneous Chemical Industry", as reported by the Census, was 60,816,515 pounds in 1931 and 55,949,580 pounds in 1933.

⁴ Nicotine sulphate and "other tobacco extracts."

⁵ Classified as sheep dip.

Bureau of Agricultural Economics; production and sales from Bureau of the Census and Bureau of Mines (indicated by footnote); imports and exports from the Bureau of Foreign and Domestic Commerce.

Table 533.—Insecticides and fungicides: Average wholesale price per pound at New York, 1924-34 1

	Arsenic	Coloina	Lead a	rsenate	701-	Bordeaux	Lime- sulphur		
Calendar year	white	Calcium arsenate	Powder	Paste	Paris green	Powder	Paste	solution, per gallon	
1924 1925 1926 1927 1927 1928 1929 1930 1931 1932 1932 1933	Cents 9.4 9.4 3.8 4.0 4.5 4.5 4.5 4.5 4.5 4.5	Cents 10. 6 7. 8 8. 0 7. 5 6. 8 7. 4 8. 1 6. 5 6. 0 6. 8 7. 8	Cents 20.9 15.6 14.6 13.8 14.1 13.5 14.5 12.6 11.6 10.4	Cents 13.1 11.0 11.0	Cents 28. 8 21. 5 18. 4 19. 2 27. 0 30. 9 35. 2 32. 5 30. 1 29. 7 29. 5	Cents 16.3 13.2 11.5 11.5 11.3 12.8 12.8 11.0 12.6	Cents 12. 5 11. 0 11. 0 11. 0 10. 9 10. 7 13. 0 12. 8 12. 8 11. 0 12. 6	Cents 16. 5 16. 5 14. 7 15. 5 15. 5 15. 2 15. 2 16. 3 17. 0 15. 1	

¹ Average of monthly range.

Bureau of Agricultural Economics; compiled from the Oil, Paint, and Drug Reporter.

Table 534.—Number of farmers' selling and buying associations, estimated membership, and estimated business, with percentages for geographic divisions, leading States, and commodity groups, 1933-34

Geographic division, State, and commodity group	Association 193	is listed,	Membersh	ip, 1934 ²	Estimated 1933-34 s		
Geographic division: West North Central. East North Central. Paoife. Middle Atlantic. West South Central. Mountain. South Atlantic. East South Central. New England.	482 425 256 202	Percent 44.0 26.5 7.5 4.2 5.3 4.4 3.9 2.3 1.9	Number 1, 137, 700 868, 620 181, 950 206, 350 194, 910 133, 610 139, 440 183, 580 109, 840	Percent 36.1 27.5 5.8 6.5 6.2 4.4 5.8 3.5	1,000 dollars 369, 120 304, 990 227, 431 152, 360 90, 187 58, 331 57, 931 49, 780 54, 870	Percent 27. 0 22. 3 16. 7 11. 2 6. 6 4. 3 4. 2 3. 7 4. 0	
Total	10,900	100.0	3, 156, 000	100.0	1, 365, 000	100.0	
State: Minnesota Illinois Iowa Wisconsin California New York Missouri Nebraska Ohio Michigan Indiana North Dakota All others Total	786 1, 010 1, 140 447 236 508 529 333 356 276 505 3, 316	7.2	335, 450 271, 900 239, 940 183, 960 85, 440 129, 250 166, 500 165, 210 140, 290 136, 900 135, 570 1, 092, 340	7.68 2.71 4.13 5.52 4.3 4.3 2.37	109, 840 123, 150 85, 270 62, 460 162, 994 110, 390 52, 870 45, 160 51, 910 34, 270 33, 200 27, 540 465, 946	8.1 9.0 6.2 4.6 11.9 8.1 3.9 3.3 3.8 2.5 2.4 2.0 34.2	
Commodity group: Dairy products Grain ** Livestock Fruits and vegetables. Cotton and products. Poultry and products. Wool and mohair. Tobacco. Nuts Forage crops Miscellaneous selling Miscellaneous buying	2, 286 3, 178 1, 371 1, 194 250 147 120 16 57 32 401 1, 848	21. 0 29. 2 12. 6 10. 9 2. 3 1. 3 1. 1 . 5 . 3 3. 7 17. 6	757, 000 600, 000 410, 000 200, 000 73, 000 63, 800 46, 600 15, 000 7, 600 106, 000 692, 000	24. 0 19. 0 13. 0 5. 9 6. 3 2. 3 2. 0 1. 5 . 2 3. 4 21. 9	380, 000 285, 000 162, 000 182, 000 100, 000 48, 000 13, 700 5, 500 11, 500 23, 500 152, 000	27.9 20.9 11.9 13.3 7.3 3.5 1.0 .4 .9 .1.7 11.1	
Total	10, 900	100.0	3, 156, 000	100.0	1, 365, 000	100.0	

¹ Including independent local associations, federations, large-scale centralized associations, sales agencies, and independent service-rendering associations, but not including subsidiaries nor associations only renting unsold property.

Includes members, contract members, shareholders, shippers, consignors, and patrons.

Including dry beans and rice.

TABLE 535.—Farmers' selling and buying associations, estimated membership, and estimated business, by commodity groups, 1927–28 and 1928–34

	1933-34	1,000 dollars 100,000 380,000 11,800 11,500 11,500 11,500 13,700 13,700 23,500 13,700 23,500	1, 365, 000	
	1932-33	1,000 dollars 42,000 390,000 1,500 28,000 182,000 8,500 6,500 6,500 140,500	1, 340, 000	
Estimated business	1931-32	1,000 dollars (8),000 620,000 1,750,000 260,000 8,600 10,000 21,000 181,000	1, 925, 000	
Estimated	1930-31	1,000 dol(drs 130,000 620,000 1,200 31,000 631,000 13,000 7,000 26,000 26,000 26,000	2, 400, 000	
	1929-30	1,000 dollars 110,000 680,000 320,000 820,000 14,600 16,800 10,800 17,200 190,000	2, 500, 000	
	1927-28	1,000 doltars 97,000 620,000 300,000 320,000 14,600 40,000 22,000 7,000 128,000	2, 300, 000	
	1034	Number 4 200, 000 757, 000 185, 000 600, 000 116, 000 15, 000 15, 000 16, 000 63, 800 106, 000 692, 000	3, 156, 000	
3.2	1933	784,000 724,000 77,800 170,000 600,000 17,500 78,000 60,000 62,000 68,000 68,000 68,000	3, 000, 000	
Estimated membership	1932	Number 240,000 740,000 74,500 180,000 705,000 18,000 18,000 18,000 12,500 62,000 63,000	10, 900 3, 000, 000 3, 100, 000 3, 000, 000 3, 200, 000 3, 100, 000 3, 150, 000 2, 300, 000 2, 400, 000 1, 925, 000 1, 340, 000 1, 346, 000 1, 365, 000	
timated m	1031	Number 190,000 122,000 1,000 1122,000 775,000 177,000 17,000 400,000 64,000 132,000	3, 000, 000	
Es	1930	Nymber 150,000 650,000 1,000 218,000 40,000 114,000 47,000 40,000 410,000	3, 100, 000	
	1928	Number 140,000 140,000 2,000 215,000 460,000 15,000 15,000 15,000 18,000 18,000 190,000	3,000,000	
	1934	Num- ber 250 2, 286 3, 178 3, 178 1, 371 147 120 401 1, 848	10,900	
d-1	1933	Nam- ber 274 2, 203 3, 131 1, 268 3, 131 1, 575 65 65 154 20 115 424 1, 648	98	
os liste	1932	Num- ber 267 2, 392 31 11, 347 3, 500 1, 885 1, 885 1, 885 1, 845 172 21 134 436 1, 645	1,900	
Associations listed	1931	Number 201 2, 391 1, 386 3, 448 2, 014 1, 13 136 13 136 474 1, 688 1, 68	1,950	1
ABS	1930	Num-Nim-Nim-Nim-Nim-Nim-Nim-Nim-Nim-Nim-Ni	11, 400 12, 000 11, 950 11, 900 11	1
	1928	Vum- ber 2, 479 1, 269 2, 012 2, 012 40 90 16 99 1, 205	1,400	1
	Commodity group	Cotton and cotton products Usts Dairy products Perage crops Fruits and vegetables. Idvestock Investock Products Products Products Products Wool and mohalt Miscellaneous selling.	Total	

Including independent local associations, federations, large-scale centralized associations, sales agencies, and independent service-rendering associations, but not including subsidiaries, contact locals, nor associations only renting unsold property.

Includes members, contract members, shareholders, shippers, consignors, and patrons.

* Including dry beans and rice.

In the light of information received subsequent to the original publication of these date, the estimates are being revised.

Table 536.—Associations marketing dairy products: Number listed and estimated business, 1925-33

	Butter- making		Cheese- making		Milk-distrib- uting		Milk-bar- gaining		Miscel- laneous		Total	
Year and State	List- ed	Esti- mated busi- ness	List- ed	Esti- mated busi- ness	List- ed	Esti- mated busi- ness	List- ed	Esti- mated busi- ness	List- ed ¹	Esti- mated busi- ness ²	List- ed	Esti- mated busi- ness
1925 1926 1928 1929 1930 1931 1932 1932 1932 New York Minnesota Wisconsin Illinois Iowa Pennsylvania California All others	1, 390 1, 400 1, 385 1, 366 1, 379 1, 357 1, 359 3 594 224	dóllars 222, 000 230, 000 245, 000 264, 804 219, 870 175, 290 133, 860 139, 290 42, 560 23, 690 1, 450 24, 830 10, 700	ber 600 751 740 717 731 712 645 637 13 22 521 28	32, 000 30, 000 27, 931 21, 790 15, 680 11, 840 14, 090 400 540 9, 420 460	ber 3 140 119 114 111 101 109 108 105 9 5 1	dollars 160, 000 135, 000 150, 000 138, 694 142, 130 112, 090 90, 410 81, 000 54, 500 2, 580 1, 280 40	ber 40 40 47 50 59 68 80 6 11 8 2 6	dollars 125, 000 192, 000 200, 000 229, 251 227, 460 206, 480 131, 000 19, 400 	179 199 195 187 133 115 105 1 12 6 19 12 2	dollars 3,000 11,000 15,000 19,320 28,750 10,480 5,070 14,620	2, 479 2, 500 2, 458 2, 435 2, 298 2, 298 628 766 74 256 30 24	doilars 535, 000 640, 000 680, 000 680, 000 520, 000 390, 000 380, 000 74, 400 49, 100 41, 180 29, 560 26, 500 24, 920

¹ Including federations, sales agencies, warehouse associations, associations manufacturing ice cream,

Farm Credit Administration.

Table 537.—Butter and cheese made by farmers' associations and percentages of total production, 1926-33

		Butter			Cheese	
Year	Associa- tions re- porting	Estimated quantity ¹	Total pro- duction	Associa- tions re- porting	Estimated quantity 1	Total pro- duction
1926	Number 1, 480 1, 517 1, 511 1, 484 1, 473 1, 484 1, 486	1,000 pounds 497,951 2 500, 000 520, 592 540, 688 583, 909 599, 926 608, 589 636, 705	Percent 34. 3 34. 4 35. 0 32. 3 35. 4 36. 0 35. 9 36. 7	Number 792 788 758 778 774 756 735	1,000 pounds 139, 113 2 125, 000 132, 955 118, 850 129, 545 129, 671 125, 076 120, 520	Percent 32. 5 30. 7 30. 4 24. 6 25. 9 26. 3 25. 8 24. 2

¹ Including quantities made by associations other than those listed as primarily engaged in the manufacture of the specified product.

² Estimated.

nilk powder, etc.

Not including amounts reported by federations, sales agencies, etc.

In subsequent years these were included among the miscellaneous associations.

Table 538.—Cooperative citrus-fruit marketings and such marketings as a percentage of production 1 for specified areas, 1920-21 to 1933-34

[Revised Jan. 1, 1935]

	Packed boxes handled by associations in—											
Marketing Season	Californ Arizo		Flor	ida	Te	xas	United S	tates 2				
1920-21	Bares 21, 806, 253 12, 847, 455 19, 810, 048 21, 671, 344 17, 635, 860 23, 011, 773 25, 427, 062 21, 810, 825 32, 129, 643 31, 880, 555 55, 704, 141 34, 329, 255 35, 330, 130	Percent 1 77. 9 69. 6 78. 5 68. 6 73. 3 71. 4 69. 5 73. 8 66. 9 79. 8 70. 7 79. 7 80. 2 84. 7	Boxes 3, 905, 841 3, 805, 942 5, 205, 510 5, 548, 241 6, 375, 759 4, 193, 316 4, 860, 948 3, 876, 577 7, 280, 155 5, 549, 105 10, 274, 883 7, 322, 602 6, 871, 789 5, 570, 867	Percent 1 25. 0 24. 5 27. 8 24. 9 31. 4 22. 6 24. 2 21. 6 27. 30. 1 29. 2 29. 5 24. 7 21. 3	Boxes 26, 570 65, 690 38, 624 95, 053 124, 115 262, 459 453, 043 363, 430 548, 237 249, 779 406, 587	Percent 1	Boxes 25, 712, 094 16, 755, 850 25, 253, 806 27, 246, 155 24, 077, 383, 063 30, 383, 063 39, 716, 747 28, 967, 192, 297 41, 552, 235 41, 341, 342	Percent 1 58.8 49.1 57.1 1 50.2 53.9 53.2 55.0 53.3 52.6 58.7 52.0 59.9 57.1 59.5				

¹ Department of Agriculture production data for 1920-21 to 1923-24, inclusive, Yearbook of Agriculture, 1934, table 194; Department of Agriculture data "Sold or for sale" for 1924-25 to 1933-34, inclusive.

² Including 1 association in Alabama and 1 in Louisiana.

Table 539.—Livestock handled, sales, and purchases, by terminal-market cooperative sales agencies, 1919-34

		Ап		wiiningie I	эпт спяреп		
Year	Asscia- tions listed	Cattle and calves	Hogs	Sheep	Total ²	Associa- tions pur- chasing	Animals
1919	Number 4 4 6 6 6 23 26 28 27 28 23 30 34 41 41	Number 63, 876 85, 316 163, 361 1736, 982 1, 409, 322 1, 881, 241 2, 003, 171, 599 1, 751, 599 2, 120, 480 2, 315, 000 2, 590, 000	Number 381, 127 536, 380 912, 095 3, 414, 016 7, 732, 437 9, 239, 070 7, 377, 084 6, 887, 149, 561 8, 483, 413 8, 054, 184 7, 259, 731 7, 169, 955 6, 352, 022 7, 575, 000 6, 295, 000	Number 23, 940 29, 676 103, 101 352, 861 733, 552 1, 202, 616 1, 550, 311 1, 581, 865, 889 2, 603, 136 2, 609, 604 3, 028, 503 3, 306, 425 3, 390, 000 3, 339, 000	Number 563, 383 748, 255 1, 310, 628 4, 727, 056 9, 933, 445 111, 382, 304 10, 686, 069 10, 333, 307 10, 426, 120 11, 921, 901 112, 051, 386 11, 957, 746 12, 414, 965 11, 778, 927 13, 230, 000 12, 225, 000	Number 2 2 2 3 4 4 8 14 18 18 121 18 22 23 22 23 25 28	Number 8, 504 6, 550 42, 032 86, 350 103, 928 242, 039 288, 150 328, 016 325, 267 3 577, 646 723, 422 633, 855 567, 183 544, 161 461, 000

³ Preliminary.

¹ Includes some animals sold for yard traders.
2 Includes animals not segregated by kind.
3 Includes 114,757 sheep, valued at \$906,040, from producers to feeders.
4 Estimates based on reports from 36 of the 38 associations.
5 Estimates based on reports from 36 of the 41 associations.
9 Estimates based on reports from 35 of the 41 associations.

Table 539.—Livestock handled, sales, and purchases, by terminal-market cooperative sales agencies, 1919-34.—Continued

	Total anin	nals handled			Value of bus	iness handled
Year	Associa- tions listed	Animals	Value of sales 6	Value of pur- chases	Associa- tions listed	Total 7
1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1927 1928 1930 1931 1932 •	28 28 30	Number 571, 887 754, 805 1, 352, 664 4, 813, 406 10, 037, 373 11, 624, 343 10, 954, 219 10, 661, 323 10, 793, 681 12, 339, 000 2 12, 755, 647 12, 857, 965 8 13, 306, 743 8 12, 763, 652 6 14, 190, 000 8 13, 100, 000	Dollars 35, 178, 255 37, 419, 935 35, 309, 401 101, 984, 106 231, 372, 776 271, 797, 282 278, 900, 482 279, 674, 261 302, 894, 934 283, 679, 996 131, 937, 515 120, 141, 418 126, 700, 000	Dollars 622, 385 458, 824 894, 972 3, 069, 638 4, 631, 630 5, 222, 121 7, 923, 372 8, 249, 106 3, 036, 904 8, 741, 163 11, 627, 701 10, 008, 169 6, 915, 387 6, 091, 102 4, 656, 533 4, 100, 000	Number 6 6 6 18 23 24 24 22 28 28 28 30 34 41 41	Dollars 35, 800, 890 37, 878, 759 36, 204, 373 104, 888, 226 196, 904, 508 236, 504, 897 279, 720, 654 293, 249, 470 274, 299, 285 289, 152, 931 314, 522, 635 273, 688, 165 8 127, 813, 049 8 138, 434, 000 8 148, 900, 000

Farm Credit Administration.

Table 540.—Freight tonnage originating on railways in the United States, 1927-831

			C	alendar ye:	ar		
Commodity	1927	1928	1929	1930	1931	1932	1933 2
FARM PRODUCTS							
Animal and animal products: Animals live: Horses and mules	1,000 short tons 541	1,000 short tons 577	1,000 short tons 553	1,000 short tons 440	1,000 short tons 316	1,000 short tons 230	
Cattle and calves Sheep and goats Hogs	8, 636 1, 296 5, 369	7, 976 1, 362 5, 871	7, 310 1, 387 5, 534	6, 785 1, 385 4, 902	6, 097 1, 343 4, 501	4, 896 1, 085 3, 885	281 4, 496 1, 008 3, 608
Packing-house products: Fresh meats Hides and leather Other packing-house	2,986 1,010	2,935 914	3,007 913	2, 928 847	2, 933 782	2, 724 655	2, 951 734
products	1, 957	1, 461	1,414	1, 165	1, 140	1, 052	992
Total	5, 953	5,310	5, 334	4, 940	4, 855	4, 431	4, 677
Eggs	651 747 407 356 2, 054	635 754 407 394 2, 348	588 793 418 414 2,576	612 807 419 354 2,485	582 768 416 388 2, 366	424 735 382 271 1,716	422 756 402 336 1,665
Total animals and animal products	26, 010	25, 634	24, 907	23, 129	21, 632	18, 055	17, 651
Vegetable products: CottonFruits and vegetables Potatoes	4, 182 12, 029 4, 728	3, 772 12, 947 4, 511	3, 940 12, 875 4, 425	3, 032 12, 589 4, 332	2, 432 11, 906 4, 114	2,777 9,866 3,418	3, 374 8, 925 3, 466
Grain and grain products: Grain: Wheat Corn Oats Other grain Grain products:	26, 237 13, 162 5, 518 5, 216	26, 950 17, 045 5, 888 5, 506	27, 019 15, 258 5, 713 4, 477	25, 466 13, 986 5, 184 4, 045	26, 228 10, 728 3, 970 2, 924	19, 120 9, 544 3, 399 2, 229	16, 501 12, 310 3, 353 2, 995
Flour and meal Other mill products.	10, 027 10, 179	10, 754 10, 580	10, 627 10, 821	10, 546 10, 610	10, 067 8, 783	9,319 6,629	8, 998 6, 779
Total	70, 339	76, 723	73, 915	69, 837	62, 700	50, 240	50, 936
		1					

See footnotes at end of table on page 742.

² Includes animals not segregated by kind.
3 Includes 114,757 sheep, valued at \$906,040, from producers to feeders.
4 Estimates based on reports from 36 of the 38 associations.
5 Estimates based on reports from 39 of the 41 associations.
6 Includes sales for yard traders.
7 Includes business not classified as sales or purchases.
8 Includes animals handled in the country.
9 Estimates based on reports from 35 of the 41 associations.

Table 540.—Freight tonnage originating on railways in the United States, 1927-331—Continued

			C	alendar ye	ar		
Commodity	1927	1928	1929	1930	1931	1932	1933 2
FARM PRODUCTS—continued Vegetable products—Contd. Hay, straw, and alfalia Sugar, sirup, glucose, and molasses Tobacco Other vegetable products	1,000 short tons 4,468 5,584 1,053 18,469	1,000 short tons 3,999 5,604 945 16,686	1,000 short tons 3,697 5,858 989 15,502	1,000 short tons 3,494 5,659 1,008 16,436	1,000 short tons 2, 174 5, 142 816 13, 346	1,000 short tons 1,569 4,286 642 12,405	1,000 short tons 1,476 4,779 680 12,845
Total vegetable products	120, 852	125, 187	121, 201	116, 387	102, 630	85, 203	86, 481
Canned goods (food prod- ucts)	4, 204	4,805	5, 029	4,751	3, 954	3, 167	3, 308
Total farm products	151, 066	155, 626	151, 137	144, 267	128, 216	106, 425	107, 440
OTHER FREIGHT							
Products of mines	713, 731 99, 391 279, 407 38, 432	696, 583 96, 737 300, 043 36, 954	737, 879 94, 855 319, 177 36, 043	642, 537 69, 366 267, 353 29, 667	501, 903 43, 024 198, 270 22, 773	362, 226 26, 109 136, 229 15, 234	395, 065 33, 165 148, 922 14, 351
Total tonnage	1, 282, 027	1, 285, 943	1, 339, 091	1, 153, 190	894, 186	646, 223	698, 943

Weight as delivered at original shipping point. In the case of freight transported over several different rallways, each ton is counted only when transported by the first railway. Some traffic, reshipped under new billing without benefit of transit privileges or proportional rates, may be counted more than once. ² Preliminary.

Table 541.—Index numbers of freight rates on livestock, wheat, and cotton, 1913-14 to 1934-351

					L	ivestoc	k						
		Ca	ttle			Hogs			Sheep				
Year beginning July	Western district	Eastern district	Southern district	United	Western	Eastern district	United States	Western district	Eastern district	United States	Total	Wheat	Cotton
1913-14 1914-15 1915-16 1916-17 1917-18 1918-19 1919-20 1920-21 1921-22 1921-23 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1928-29 1938-31 1938-32 1931-32 1932-33 1933-34 1934-35	100 100 101 128 166 164 155 154 152 152 151 151	100 104 108 113 116 158 157 207 2211 199 199 199 199 198 195 195 196 186 186	100 100 99 98 120 128 147 137 136 136 136 136 136 136 136 136 136 136	100 100 101 102 103 129 131 170 169 158 158 157 157 156 166 165 163 158	100 99 99 99 100 124 124 161 153 153 151 150 150 150 150 149 148 147 148	100 102 107 116 122 169 169 222 230 218 217 214 214 214 214 205 199 198 199 199	100 100 101 102 104 132 132 172 173 164 163 161 161 161 160 159 158 157 157	100 99 98 98 99 118 119 152 148 137 137 135 134 134 135 135 135 135 135 134 134 134	100 102 105 112 129 167 167 225 226 199 200 200 200 200 200 189 181 183 185 185	100 99 99 100 103 126 127 164 160 147 146 145 144 143 142 142 143 142 142	100 100 101 102 103 130 131 170 169 160 158 157 157 155 155 155 156 155 156 155	100 101 100 101 101 128 128 164 160 150 150 150 149 148 148 146 139 146 146	100 100 100 103 133 136 171 176 164 166 166 165 169 2 139 2 106 2 95

¹ Based on rates in effect through Mar. 4, 1935, except cotton which is through Mar. 7.

² To preserve comparability, where alternative rates depending on loading were established during these years, rate for highest weight to which shippers could load without having cotton compressed at own expense was used in computation of index.

§ Preliminary.

Bureau of Agricultural Economics; compiled from reports of the Interstate Commerce Commission. Figures for earlier years appear in previous issues of the Yearbook.

Bureau of Agricultural Economics.

These relatives are based on the average of the rates in effect during the crop year. Rates in effect in 1913=100. For points of origin and destination, see Yearbook, 1928, tables 550 and 551.

Table 542.—Cooperative extension workers: 1 Number employed, United States, June 30, 1933, and June 30, 1934

State or Territory	Cou agricu agents assista	tural and	Cou hor demon tion a and a	ne istra- gents ssist-	Cou club a and a an	gents ssist-	Administra tors and supervisors		l matte		To	tal
	1933	1934 2	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
AlabamaAlaska	95	95	59	70			12 3	13 2	12 1	23 1	178	201 3
Arizona	17	15	5	5			3	3	7	7	32	30
Arkansas	87	81	57	72			15	15	16	12	175	180
California	86	95	30	26			12	16	27	24	155	161
Colorado	26	47	6	7			5 5	4	13	21	50	79
Connecticut	10	10	8	8	13	13	5	4	24	24	60	59
Delaware	3	.3	3	3	3	3	3	3	6	5	18	17
Florida	47	49	34	33			11	11	15	16	107	109
Georgia	165	169	100	100 6			9	15	10	27	284	311
HawaiiIdaho	6 20	$\frac{6}{31}$	6	6	2	2	3 7	2	.4	4	19	18
Illinois	109	98	33	35	4	3	13	6 13	17 30	19 27	52	64 176
Indiana	81	91	11	10	5	5	12	19	33	37	189 142	162
Iowa	103	136	19	18	2	li	17	16	62	58	203	229
Kansas		105	26	26	l ī	i	13	19	31	39	150	190
Kentucky	86	123	29	30			18	24	35	28	168	205
Louisiana	75	74	44	45			16	15	17	28 15	152	149
Maine	15	15	14	14	7	7	5	5	12	11	53	52
Maryland	31	31	26	25			5	5	33	34	95	95
Massachusetts		17	16	14	26	25	8	8	22	22	92	86
Michigan	66	67	5	4	9	9	16	20	44	41	140	141
Minnesota	58	81	13	14	15	2	12	12	25	28	123	137
Mississippi	98	102	64	71			18	18	24	24	204	215
Missouri		138 37	15 9	15 9			8 5	8	19	21	113	182
Montana Nebraska		92	14	15	11	2	9	5	15 24	14 30	57 94	65 148
Nevada		13	5	13	1	2	3	3	3	30	23	148
New Hampshire		ii	10	10	13	13	5	5	13	13	52	22 52
New Jersey		24	15	17	7	7	4	4	17	18	64	70
New Mexico	19	21	8	7	l	l	. 6	6	5	7	38	41
New York	73	84	44	44	38	41	10	11	87	79	252	259
North Carolina	108	118	93	84			. 15	15	21	25	237	242
North Dakota		63	4	4		1	6	7	15	12	48	87
Ohio	70	84	21	21	11	11	12	12	52	41	166	169
Oklahoma		125	74	83			. 16	15	13	18	208	241
Oregon	34 73	49 73	46	45	8	8	12	13	12 42	14	68	86 172
Pennsylvania		13	40	40			12	19		41	173	172
Puerto Rico Rhode Island	3	3	3	3	3	3	3	3	1 7	7	19	19
South Carolina	77	71	55	54		, ,	15	14	13	19	160	158
South Dakota		73	14	13	4	3	7	12	15	7	57	108
Tennessee		104	43	44	I		12	12	19	22	162	182
Texas		264	149	165			26	27	25	25	426	481
Utah	. 22	25	7	6			. 5	5	14	13	48	49
Vermont		14	11	11	11	11	5	5	11	10	52	51
Virginia	. 101	129	48	50			. 17	17	37	34	203	230
Washington	. 39	56	11	10	3	3	3	3	10	10	66	82
West Virginia	. 49	47	25	21	8	7	8	9	19	20	109	113
Wisconsin	47	61	5	6	8	7	11	12	42	45	113	131
Wyoming	. 20	24	7	6			. 4	4	8	7	39	41
Total	2 780	3. 344	1, 357	1, 396	202	188	475	512	1, 079	1, 111	5, 893	6, 551
1 Vigit	.,	0,011	, 001	1,000	1 202	100	7.0	012	-, 0.0	-,	, 000	3,001
	1		1	<u> </u>	1	<u> </u>		1	<u>' </u>		<u> </u>	<u> </u>

¹ Includes both white and Negro extension workers.
² Increase due mainly to Agricultural Adjustment work.

Extension Service.

Table 543.—Cooperative extension work: Projects and percentage of agents' and specialists' 1 time devoted to each, 1926-33

Project	1926	1927	1928	1929	1930	1931	1932	1933
Soils Farm crops Horticulture Forestry Animal husbandry Dairy husbandry Poultry husbandry Rural engineering Rodents and insects Agricultural economics Foods and nutrition Child training and care Clothing Home management House furnishings Home health and sanitation Community activities Formulation of the extension program. Organization Miscellaneous	7.5 7.5 9.0 3.6 1.7 4.0 7.1 1.5 1.2 5.9	4.8 12.4 7.1 8.2 7.9 8.8 3.4 1.5 4.1 7.1 6.8 2.0 1.2 6.0	Percent 5.1 11.5 7.3 1.0 7.8 8.7 8.1 3.3 1.3 4.0 7.0 6.8 1.7 2.4 1.2 5.8	Percent 5.1 11.6 7.0 1.0 7.6 8.6 7.9 3.2 1.1 4.3 7.5 6.9 2.2 2.6 1.2 5.9	Percent (2) 15. 2 8. 7 9. 6. 5 7. 7 7. 6. 3. 3 1. 3 6. 2 7. 0 8. 6. 7 2. 1 2. 6. 1 3. 3 3. 7 7. 5	Percent 13.8 9.4 9.9 6.7 6.7 6.8 3.1 1.4 6.8 7.1 6.6 2.0 2.7 7.2 5.3 3.7 7.2 8.0	Percent 12.1 10.3 96.8 5.8 6.5 2.9 1.6 7.4 8.0 7.7 6.4 8.0 7.7 1.0 5.0 4.4 7.5	14. 3 9. 8

Extension Service.

Table 544.—Extension activities and accomplishments, as reported by all county extension agents, 1928-33

Total activity or accomplishment relating to extension	1928	1929	1930	1931	1932	1933
Farm visits made Home visits made Office calls received Telephone calls received News articles or stories published Individual letters written Different circular letters prepared Bulletins distributed Events at which exhibits were shown Training meetings held for local leaders Method demonstration meetings held Meetings at result demonstrations Tours conducted Achievement days held Encampments held All meetings held Attendance at all meetings held Activated demonstrations conducted Voluntary local leaders assisting with Adult extension Junior extension Adult home demonstration groups	432, 433 432, 433 437, 437 4, 556, 689 471, 331 4, 510, 657 5, 608, 604 8, 999 42, 902 437, 993 2, 781 21, 931, 317 21, 951, 317 581, 526 179, 559 58, 258	489, 294 3, 991, 725 2, 710, 723 423, 600 4, 712, 940 6, 345, 488 9, 826 41, 604 486, 398 	1, 758, 743, 44, 208, 4, 317, 555, 546, 208, 449, 854, 501, 988, 214, 561, 6, 657, 561, 6, 667, 756, 772, 14, 720, 3, 762, 25, 605, 488, 934, 182, 233, 043	1, 822, 272 602, 885 5, 156, 884 3, 068, 569 490, 507 4, 551, 924 28, 208, 244 8, 208, 244 19, 552 19, 663 19, 663 10, 267, 348 1, 090, 011 278, 633 98, 384 38, 388	1, 831, 319 633, 784 5, 202, 539 3, 208, 761 4, 412, 223 247, 536 8, 216, 890 22, 341 491, 600 66, 525 10, 699 16, 759 3, 335 11, 226, 082 311, 604 105, 234 41, 131	8, 007, 508 3, 675, 175 4, 569, 338 8, 250, 480 8, 214, 816 7, 881 22, 510 60, 021 474, 858 60, 065 10, 646 17, 527 2, 468 878, 897 30, 139, 724 1, 378, 315 327, 960 104, 503 43, 108

Extension Service.

Only field work of specialists as reported by county extension agents is included.
 Since 1929 the percentage of time devoted to "soils" has been included in "farm crops."
 Prior to 1930 the information on "child training and care", "formulation of the extension program", and "organization" was included in "miscellaneous."

Table 545.—4-H club work: Number of clubs, enrollment, projects completed, etc., 1927-33

Item	1927	1928	1000	1000	1001	1000	1 1000
nem	1927	1928	1929	1930	1931	1932	1933
Junior clubs	44, 188	46, 671	52, 180	56, 180	60, 781	59, 081	57, 400
Different boys enrolled Different girls enrolled	249, 553 370, 159	270, 534 393, 406	303, 509 452, 587	333, 197 489, 517	360, 653 529, 721	381, 573 544, 039	378, 143 543, 822
Total enrollment	619, 712	663, 940	756, 096	822, 714	890, 374	925, 612	921, 965
Different boys completing ¹ Different girls completing ¹	153, 324 245, 783	175, 069 272, 510	201, 910 305, 577	222, 472 331, 873	252, 328 376, 915		266, 601 399, 253
Total completing	399, 107	447, 579	507, 487	554, 345	629, 243	670, 722	665, 854
Projects started Projects completed (total) 1	776, 029 25, 789 5, 253 25, 228 88, 922 2, 192	1, 468, 584 882, 795 26, 997 6, 137 36, 475 112, 296 2, 719 29, 468 48, 233 56, 900	995, 262 29, 197 7, 559 40, 380 124, 459 3, 852		1, 693, 866 1, 114, 065 44, 595 10, 582 45, 883 156, 392 7, 877 7, 168 38, 862 68, 547 62, 058		1, 762, 855 1, 185, 563 42, 086 10, 921 41, 046 173, 898 11, 938 8, 045 35, 873 78, 211 67, 901
Agricultural economics Foods Nutrition	4, 925 142, 302 54, 451	8, 361 167, 058 62, 790	7, 379 182, 877 65, 652	6,448	6, 558	6, 696	7, 423 252, 555
Child training and care	146, 181 13, 822 30, 024	162, 291 16, 309 36, 274 59, 342 51, 145	190, 249 16, 237 40, 999 77, 932 57, 025	2 4, 508 209, 656 17, 472 49, 571 67, 810 42, 615		6, 142 233, 341 24, 450 62, 435 84, 519 55, 993	2,706 233,701 20,278 64,473 78,091 56,417

¹ Different boys and girls completing is the sum of the individual boys and girls completing 1 or more projects in contrast to project completions which is the sum of all the projects completed by all boys and

Prior to 1930, the work on "child training and care" was included in "miscellaneous."

Extension Service.

Table 546 .- Imports and price per pound of raw silk and production, imports and price per pound of rayon yarn, United States, 1924-34

1	Kaw	SIIK	Rayon yarn					
Calendar year	Net im-	Average	Produc-	Net im-	Average	e price 4		
	ports 1	price 2	tion	ports 3	denier			
1924	1,000 pounds 59,626 76,003 76,870 85,036 87,172 96,848 80,881 87,540 74,841 70,361 60,757	Dollars 5. 917 6. 341 5. 937 5. 100 4. 859 5. 4. 777 8. 3. 173 8. 2. 233 8. 1. 536 6. 1. 200	1,000 pounds 36, 330 51, 900 62, 690 75, 555 97, 230 121, 280 126, 805 150, 880 134, 810 208, 530 210, 330	1,000 pounds 6,569 12,363 13,918 17,740 15,113 20,318 6,009 3,460 2,551 6,157 7,875	Dollars 2, 113 2, 004 1, 810 1, 489 1, 500 1, 246 1, 059 758 660 660 587	Dollars 1. 871 1. 754 1. 603 1. 289 1. 300 1. 073 . 990 . 636 . 538 . 503 . 487		

¹Net imports are imports minus reexports; beginning 1934, imports for consumption.
²Average of monthly average prices of Japanese Kansai, No. 1, except as noted.
³Net imports in 1924 are imports minus reexports; 1925-33 figures are imports minus exports and reexports;
1934, exports minus imports for consumption.
⁴Average of monthly average prices of domestic yarn, first quality. The count indicates the number of deniers or ½-decigram units, in weight, of a standard length of 450 meters. Since the standard is based on an arbitrary fixed length and a variable weight, the finer the yarn the smaller the count; 150 denier count, a size commonly used, is fine and 300 denier count is coarse.

Adverse of monthly experse prices of Leneness Bast No. 1 x 13-15.

⁵ Average of monthly average prices of Japanese Best, No. 1 x 13-15. ⁶ Preliminary.

⁷ Net exports.

Bureau of Agricultural Economics.

Compiled from annual issues of Commerce and Navigation of the United States Department of Commerce, except production of rayon yarn which is from the Textile Organon, a publication of the Tubize Chatillon Corporation. Prices are from bulletins of the U.S. Bureau of Labor statistics.

Table 547.—Gold value of the dollar, and dollar value of gold in London, April 1933-March 1935

Date	Gold value of the dollar	Dollar value of gold per ounce		Date	Gold value	Dollar value of gold per ounce		Date	Gold value	Dollar value of gold per ounce	
		Actual	Rela- tive	Jail	of the dollar	Actual	Rela- tive		of the dollar	Actual	Rela- tive
1933 Apr. 1-15 2 Apr. 3 Apr. 10 Apr. 17 Apr. 18 Apr. 19 Apr. 19 Apr. 24 May 1 May 15 May 22 June 6 June 12 June 19 June 25 June 19 June 27 June 19 June 24 June 19 June 24 Aug. 21 Aug. 28 Sept. 11 Sept. 5 Sept. 11 Sept. 15 Sept. 11 Sept. 15 Sept. 11 Sept. 18 Sept. 25 Oct. 20 Oct. 20 Oct. 30 Nov. 20 Nov. 20 Nov. 27	100. 0 90. 2 85. 9 84. 8 84. 8 84. 1 83. 4 81. 6 69. 3 69. 3 69. 6 65. 6 64. 8 65. 3 64. 3 65. 3	Dollars 20. 67 20. 62 20. 64 20. 67 22. 92 24. 07 24. 39 23. 89 24. 78 25. 54 25. 54 25. 95 27. 54 28. 88 29. 24 29. 28 31. 41 31. 92 31. 92 31. 92 31. 92 31. 92 31. 92 31. 62 33. 19 33. 75	100. 0 99. 8 99. 9 100. 0 110. 9 116. 4 117. 8 118. 0 115. 6 119. 9 123. 6 125. 5 123. 2 144. 3 139. 7 134. 5 133. 1 134. 5 140. 5 140. 5 141. 7 152. 0 154. 4 150. 1 152. 5 153. 4 150. 1 150. 1 150. 1 150. 6 160.	1933 Dec. 4	59. 4 59. 5 59. 4 59. 5 59. 2 59. 2 59. 3 59. 5 59. 4 59. 4 59. 4 59. 4 59. 4	Dollars 32.23 32.73 32.54 32.24 32.86 33.36 34.51 34.56 34.67 34.74 34.77 34.75	155. 9 158. 3 157. 4 156. 9 159. 0 159. 0 167. 0 167. 2 167. 7 168. 1 168. 1 168. 2 168. 1 168. 3 16	1934 Aug. 7. Aug. 13. Aug. 20. Aug. 27. Sept. 3. Sept. 10. Sept. 17. Sept. 24. Oct. 15. Oct. 22. Oct. 29. Nov. 5. Nov. 12. Nov. 19. Nov. 26. Dec. 3. Dec. 10. Dec. 17. Dec. 24. Dec. 31. Jan. 24. Jan. 21. Jan. 24. Jan. 21. Jan. 25. Feb. 4. Feb. 11. Feb. 18. Feb. 25. Mar. 11. Mar. 18. Mar. 25.	Cents 59.3 6 8 6 5 7 8 8 8 9 9 1 3 3 4 4 4 4 4 5 5 9 5 9 5 9 1 5 9 5 9 5 9 5 9 5 9 5 9	Dollars 34.83 35.25 35.18 35.28 35.28 35.28 35.51 35.07 34.96 34.83 34.83 34.83 34.77 34.77 34.77 34.78 34.79 34.77 34.78 34.81 35.07 34.98 34.77 34.77 34.78 34.81 35.09 34.77 34.78 35.20 34.88 35.20 34.76	168. 5 5 170. 5 170. 2 170. 2 170. 2 170. 2 170. 2 170. 2 170. 2 170. 2 169. 7 169. 7 169. 7 169. 3 168. 5 168. 5 168. 4 168. 3 167. 7 169. 6 168. 4 168. 1 169. 7 170. 4 168. 1 168. 2 170. 4 168. 1 169. 0 170. 4 168. 8 1

¹ Based on the open market price of gold in London, converted at the dollar exchange rate at the "fixing of the gold price" each day at 11 a. m. (London time).

² Par.

Bureau of Agricultural Economics. Values are for Monday unless it falls on a holiday, when they are for the next business day.

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